60

SERVICE MANUAL SD220/SD320

marantz®

model SD220/SD320

Stereo Cassette Deck

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ Company has created the ultimate in stereo sound. Only original MARANTZ parts can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

Parts for your MARANTZ stereo are generally available within 72 hours throughout the nation via a toll-free line to our National Parts Depot in California. The sales professionals who take your call immediately refer to their own desk top computer terminal and can quickly determine the availability and price information you require. If, for some reason, your order should exceed our available stock, we usually can instantly provide an alternate replacement part or current delivery information. When the order is placed and confirmed, the computer simultaneously generates "hard copy" orders at the distribution center. As hard copies come directly from the computer to the national parts depot, your requested stock is assembled and prepared for shipment and placed on the first available carrier for delivery to you.

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Phone orders will eliminate mail delays, and we encourage the use of this method. If you order by mail, use MARANTZ parts order forms which are available from our National Parts Depot located at the following address:

SUPERSCOPE NATIONAL PARTS DEPARTMENT
20525 Nordhoff Street
Chatsworth, California 91311
Phone: 1-800-423-5108
1-213-998-9333

The following information must be supplied to eliminate delays in processing your order:

1. Complete address.
2. Complete part numbers.
3. Complete description of parts.
4. Model number for which part is required (indicate MARANTZ).
5. Account number (for account customers only).

Direct consumers will be provided with the current retail price quotation on available parts in order to advise them of the cost of the parts and shipping.

OVERSEAS PARTS ORDERING

Parts may also be ordered from the following overseas addresses:

U.S.A.
Marantz Company, Inc.
National Service Dept.
P.O. Box 577
Chatsworth, CA 91311
U.S.A.

CANADA
Superscope Canada, Ltd.
3710 Nashua Drive
Mississauga
Ontario, Canada L4V1M5

AUSTRALIA
Marantz Australia
32 Cross Street
Brookvale, NSW 2100
Australia

JAPAN
Marantz Japan, Inc.
3622 Kamitsuruma
Sagamihara-shi
Kanagawa, Japan

EUROPE

Marantz Europe S.A.
326 Avenue Louise Bte 32
1050 Brussels
Belgium

Marantz France
4 rue Bernard Palissy
92600 Asnieres
France

Marantz Audio U.K., Ltd.
193 London Road
Staines, Middlesex
United Kingdom

Marantz Germany GMBH
Max-Planck-Strasse 22
6072 Dreieich
West Germany

Marantz Belgium
45 rue Auguste Van Zande
1080 Brussels
Belgium

Marantz Svenska A.B.
Svartviksvägen 56
Traneberg
Box 12016
161 12 Bromma
Sweden

Marantz Norske A.S.
Refstadalleen 13
Oslo 5
Norway

Marantz Denmark
Bregnerødvej 132b
3460BIRKERØD
DENMARK

Marantz GMBH Austria
Wiedner Hauptstrasse 98
1050 WIEN
AUSTRIA

All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please contact the nearest facility for the necessary assistance.

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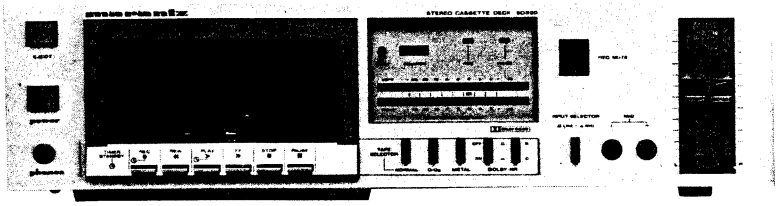
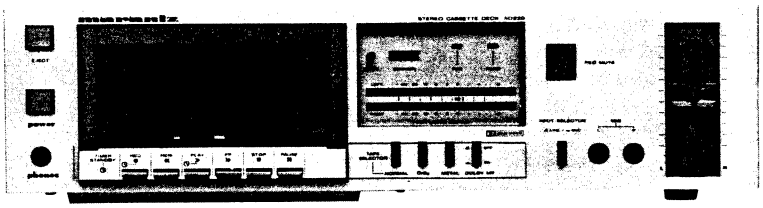
MARANTZ MODEL SD220/SD320 CASSETTE DECK





INTRODUCTION

This service manual are prepared for use by Authorized Warranty Station and contains service information for Marantz Stereo Cassette Deck.

Servicing information and voltage data included in this manual are intended for use by the knowledgeable and experienced technician only. All instructions should be read carefully. No attempt should be made to proceed without a good understanding of the operation of the Cassette Deck.

The parts list furnishes information by which replacement parts may be ordered from the Marantz Company. A simple description is included for parts which can be usually obtained through local suppliers.

1. SHOCK, FIRE HAZARD SERVICE TEST:

CAUTION: After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verfied before return to user/customer.

Ref. UL Standard NO. 1270. Para. 66. 3. D (Mandatory Test after servicing Electrical Appliances, effective 7-1-83).

2. P.W. BOARDS

As can be seen from the circuit diagram, the chassis of your Cassette Deck consists of the following units. Each unit mounted on a printed circuit board is described within the square enclosed by a bold dotted line on the circuit diagram.

1. Main Amp . . . . . mounted on P.W. Board PJ01
2. Rec Volume . . . . . mounted on P.W. Board PJ02
3. Rec Mut. Switch . . . . . mounted on P.W. Board PJ03
4. MECHA L.E.D. . . . . mounted on P.W. Board PJ04
5. Head Phone . . . . . mounted on P.W. Board PJ05
6. Power Switch . . . . . mounted on P.W. Board P801
7. Power Trans . . . . . mounted on P.W. Board P802

2. TEST EQUIPMENT REQUIRED FOR SERVICING

For measuring or checking your Cassette Deck, the following instruments and materials are necessary.

- VTVM
- Audio Oscillator (AF OSC)
- Attenuator (600 Ω)
- Oscilloscope
- Bandpass Filter (1 kHz)
- IEC A-Curve Filter
- Wow and Flutter Meter
- Torque Meter (Cassette Type)
- Digital Frequency Counter
- Distortion Meter
- Blank Tapes (Completely erased with bulk eraser)
  TDK AC-212 (Normal)
  TDK AC-512 (CrO_2)
  TDK AC-711 (Metal)

NOTE: **If any doubt is noted in a measured value, use new tape.**

- Test Tapes (New Tape)

MTT-111	Wow and Flutter, Tape Speed
MTT-112	Measurements of Output Level
MTT-112B	Signal-to-Noise Ratio
MTT-150	Adjustment of Output Level
MTT-256	Frequency Response (for Normal)
MTT-356	Frequency Response (for CrO_2 and Metal)
MTT-121	Cross Talk
MTT-141	Channel Separation
MTT-111	Wow and Flutter, Tape Speed

4. DESCRIPTION OF THE CIRCUIT

4.1 PLAYBACK EQ AMP CIRCUIT

The simplification of the circuit is realized by using an OP amplifier including two circuits. To shorten the rise time of the circuit, the voltage of about 2.5 V, instead of 0 V, is applied to the output terminal of Q001. Since the signal output of the head is low, sufficient overload can be obtained.

When the power is OFF, DK83 immediately turns Q001 off to prevent pops noise.

4.2 DOLBY CIRCUIT (SD320)

Two kinds of ICs were developed for use in the DOLBY C circuit and a pair of these ICs are used for each channel. One of them includes all of the amplifiers necessary in the DOLBY system and the other includes the change-over circuit for the DOLBY system.

The changing over of the DOLBY system is performed by the presence or non-presence of the voltage.

When DOLBY is OFF, +B voltage is applied through R651 to the base of Q651, so that Q651 turns ON and the pins 14 and 4 of the IC becomes 0 V. At this time, the DOLBY system is OFF.

When DOLBY B is operated, no voltage is applied to the change-over circuit, so that the IC self-retains and the DOLBY system becomes state of B.

When DOLBY C is operated, +B voltage is applied through D651 and about 10 V is applied through R652 to the pins 14 and 4 of each IC. At this time, the DOLBY system becomes state of C (Fig. 1).

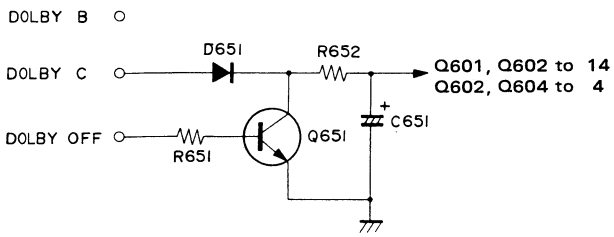


Figure 1.

4.3 BIAS CIRCUIT AND RECORDING EQ CIRCUIT

The bias and recording EQ circuits are changed over by the push button in each position.

Bias circuit

The bias curren is changed over by changing the resistance between the base-earth of the control Tr.

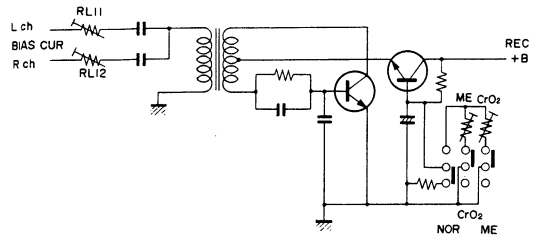


Figure 2.

Recording EQ circuit

The fixed peaking coil is used in common. The middle-frequency compensation is switched and at the same time the level is also changed over.

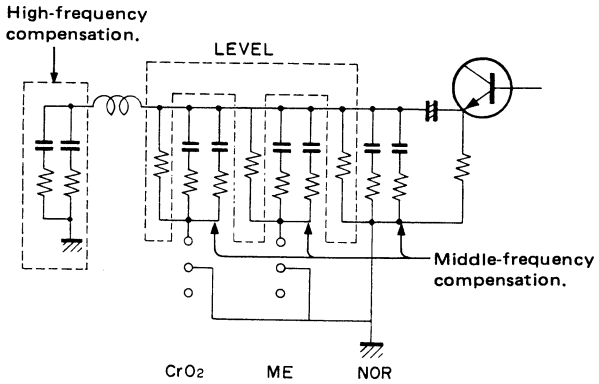


Figure 3.

4.4 MUTING CIRCUIT

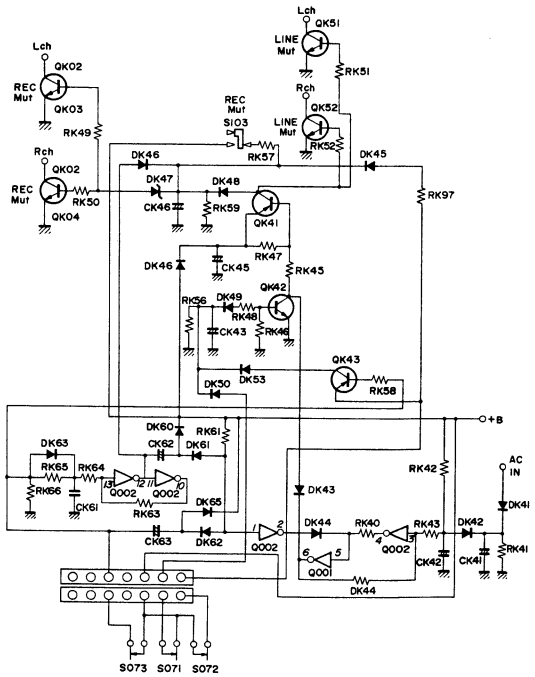


Figure 4.

(A) POWER ON

Q002 ③ LOW ⇒ Q002 ④ ⑤ HIGH ⇒ Q002 ⑥ LOW ⇒ QK41 ON ⇒ QK03, QK04, QK51, QK52 ON

When the charge of CK42 is high, muting is released.

(B) STOP

S071 ON ⇒ QK42 ON ⇒ QK41 ON ⇒ QK03, QK04, QK51, QK52 ON

(C) PLAY PAUSE ON

S072 ON ⇒ QK43 ON ⇒ QK42 ON ⇒ QK41 ON ⇒ QK03, QK04, QK51, QK52 ON

(D) REC PAUSE ON

S072 ON ⇒ DK45 ⇒ DK47 ⇒ QK03, QK04 ON

Since S073 is ON, +B voltage is applied to the QK43 base and QK43 turns OFF (Line Muting OFF).

(E) POWER OFF

Since the charge held by CK42 is discharged via DK42 ⇒ RK41, Q002 ③ Low ⇒ Q002 ④⑤ High ⇒ Q002 ⑥ Low ⇒ QK41 ON ⇒ QK03, QK04, QK51, QK52 ON.

4.5 REC-PLAY CHANGING CIRCUIT

The change-over circuits of the MIC, PLAY and DOLBY OUT amplifiers are different from that of SD320/SD220. The DOLBY OUT change-over circuit is built-in the DOLBY IC, and those of the MIC Amp and PLAY EQ Amp are changed to diode switches (Fig. 5).

* This amplifier circuit diagram shows a single channel.

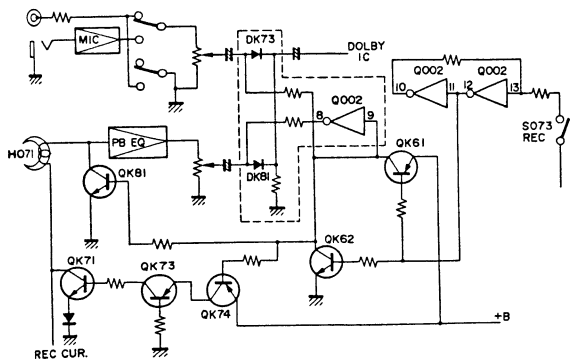


Figure 5.

(A) PLAY MODE

REC SW. (S073) OFF ⇒ Q002 ⑬ LOW ⇒ Q002 ⑫ ⑪ HIGH ⇒ QK62 ON
QK71 ON ⇐ QK73 PASS ⇐ QK74 ON
DK81 ON ⇐ Q002 ⑧ HIGH ⇐ Q002 ⑨ LOW

(B) REC MODE

REC SW (S073) ON ⇒ Q002 ⑬ HIGH ⇒ Q002 ⑫ ⑪ LOW ⇒ QK61 ON ⇒ QK81 ON
DK73 ON

4.6 SOFT-TOUCH PUSH BUTTON

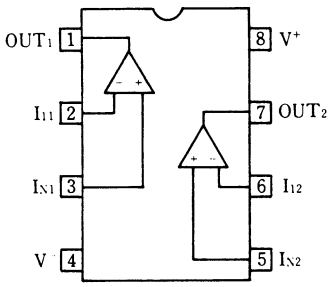
The push buttons used so far are actuated by the mechanical force of a finger in contrast with the push buttons employed in this unit which require finger pressure only to generate mechanical power. The principal source of the mechanical power is the rotational power of a flywheel which allows soft operational commands such as a pressure of 0 to 400 grams on the button or a stroke of 3mm in length to be sensed.

4.7 MECHANICAL SHUT-OFF MECHANISM

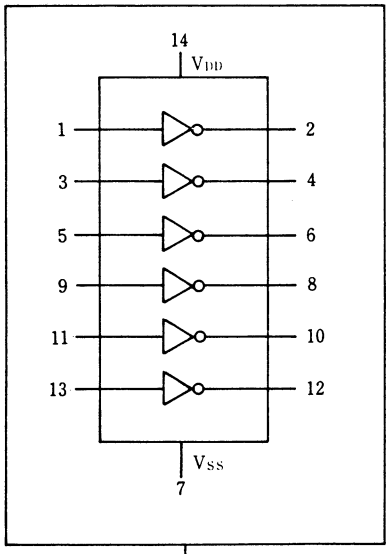
The end of a tape is detected by means of a playback take-up torque. In the PLAY, REC, FF and REW modes, the rotation of the playback take-up torque is halted as the end of the tape is detected. At this time, the lock cam is released by the pin of the TMS tension arm (825N) and the cam of the TMS gear (831N). In this way, an auto shut-off operation is accomplished.

PIN CONNECTION DIAGRAMS OF IC'S USED IN THIS UNIT

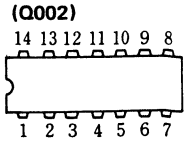
Connection Diagram (Q001)



Block Diagram



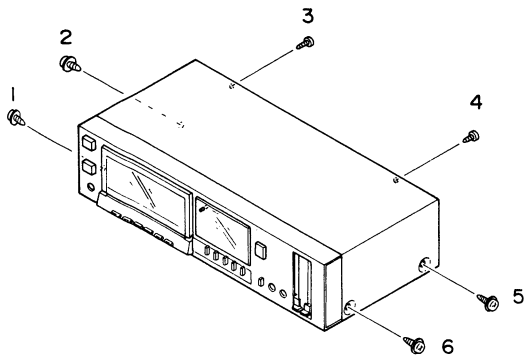
(Q002)



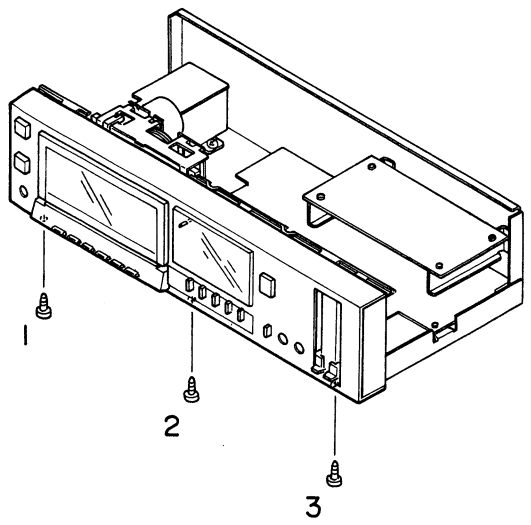
This IC consists of six inverters.

5. DISASSEMBLY

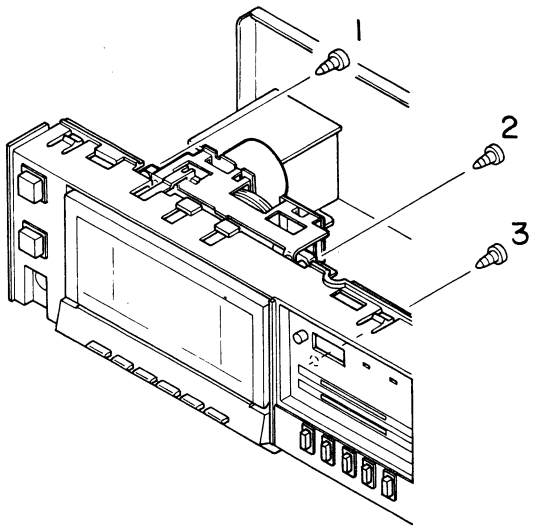
5.1 REMOVING THE TOP COVER
Remove the six screws 1 ~ 6 .



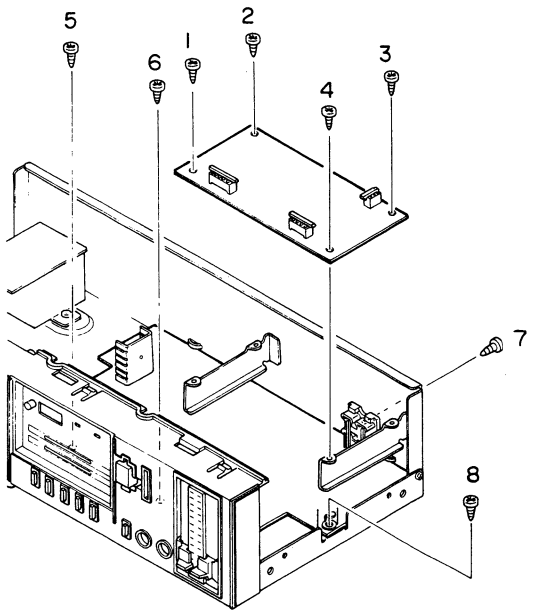
5.2 REMOVING THE FRONT PANEL
Remove the three screws 1 ~ 3 .



5.3 REMOVING THE MECHANISM
Remove the three screws 1 ~ 3 .



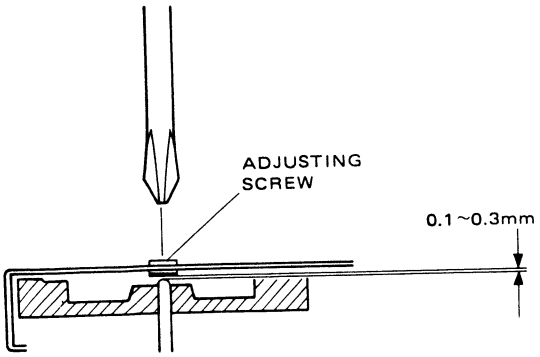
5.4 REMOVING THE P.W. BOARD.
Remove the four screws 1~ 4 and remove DOLBY P.W. Board. Remove the four screws 5 ~ 8 and remove Main amp P.W. Board.



6. MECHANICAL ADJUSTMENTS

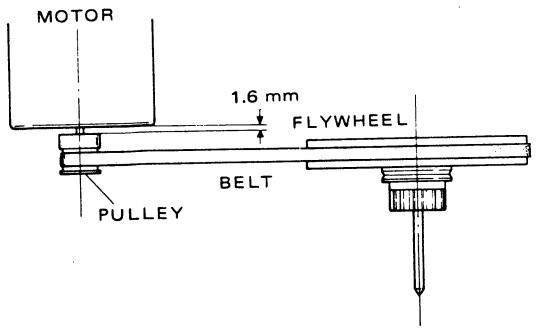
6.1 ADJUSTING THE FLYWHEEL THRUST

Adjust the thrust screw at the flywheel bracket until the clearance between the capstan tail end and the thrust bearing is 0.1 to 0.3 mm, using a philips screw driver. For adjusting, feel for axial dropping of the flywheel for proper clearance as this cannot be seen through.



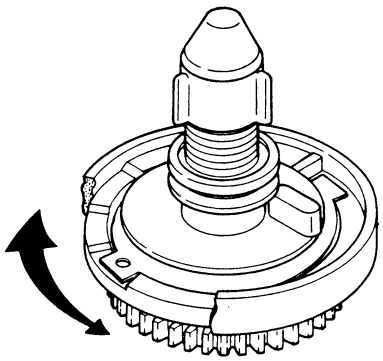
6.2 ADJUSTING THE MOTOR PULLEY

After putting the pulley on the motor shaft, attach the belt from the pulley to the flywheel. After turning the flywheel 2 or 3 times, properly position the pulley so that the belt is put on the center of the flywheel. Make sure the clearance between the pulley and the motor is approx. 1.6 mm.



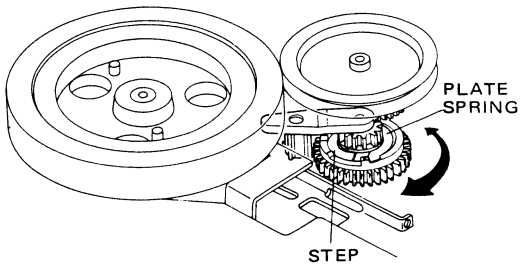
6.3 ADJUSTING THE PLAY TAKE-UP TORQUE

Set the plate spring in proper one of the six steps as shown.
The adjustable torque range is 40 to 65g·cm.
The torque variation ratio is approx. 5g·cm/step.



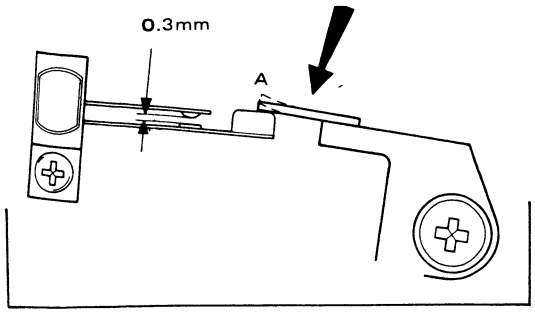
6.4 ADJUSTING THE FF/REW TORQUE

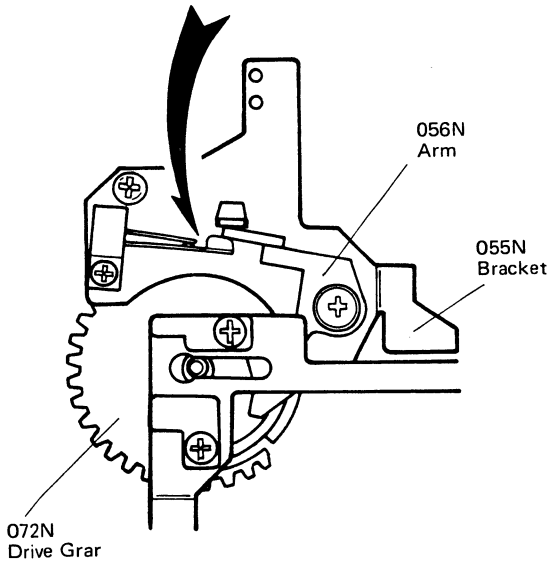
Set the plate spring in proper one of the four steps as shown.
The adjustable torque range is 75 to 120g·cm.
The torque variation ratio is 5 to 10g·cm/stop.



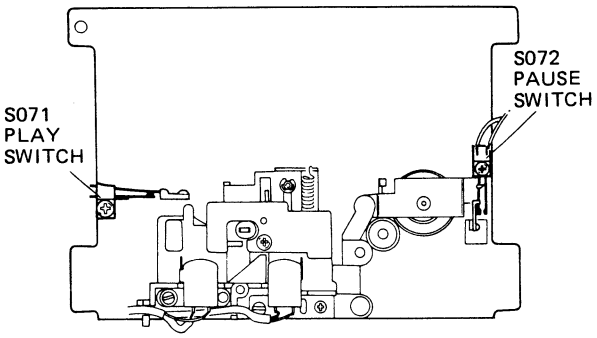
6.5 ADJUSTING THE CONTACT ELEARANCE OF THE STARTER SWITCH

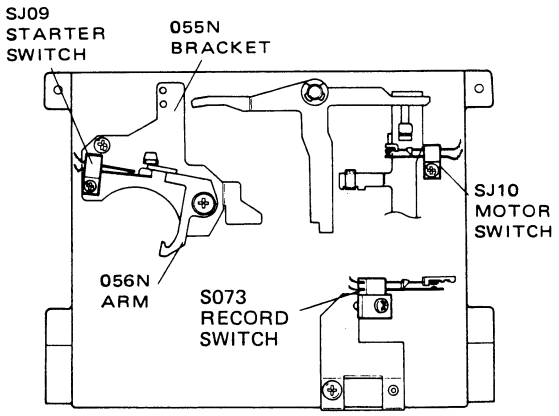
When pushing the starter switch in stop mode of operation, if the motor is not running, adjust the contact clearance of starter switch by bending A portion until the clearance becomes 0.3mm.





SWITCH LOCATION

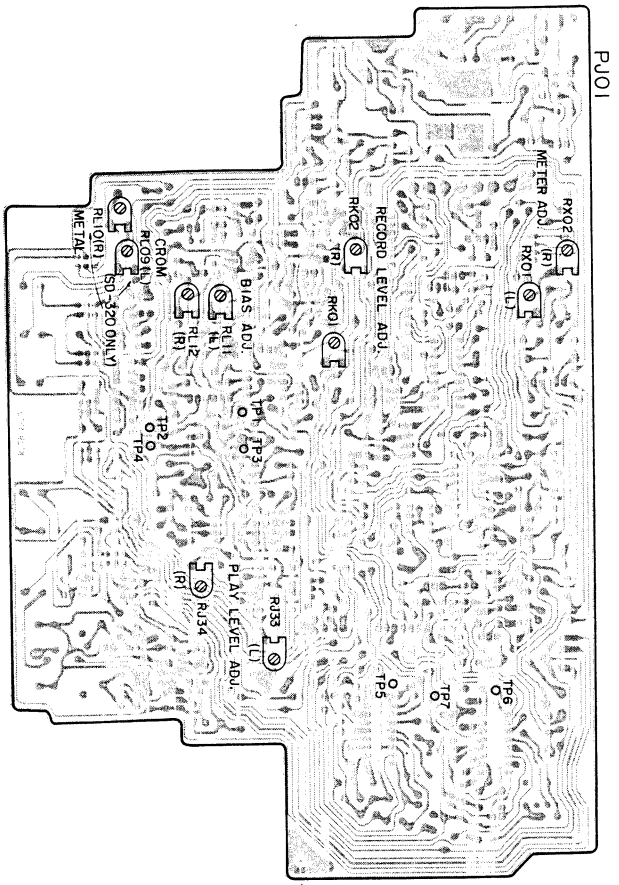




7. ELECTRICAL ADJUSTMENTS

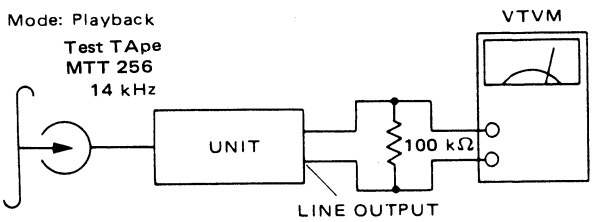
Precautions before Adjustment

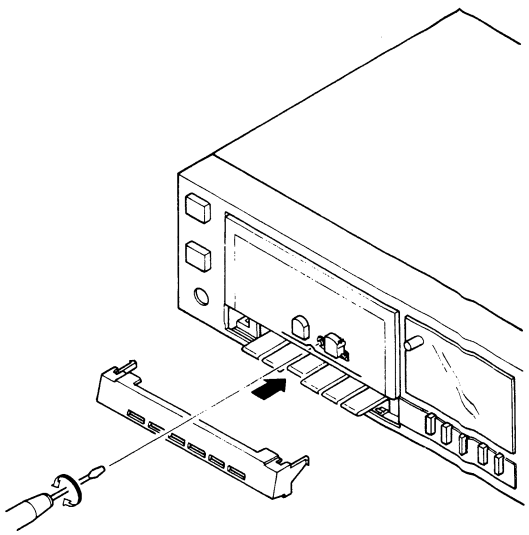
1. Before playing the test tape back, thoroughly demagnetize the heads, capstan and similar metal parts using an eraser as the test tape-recorded tone is easily erased.
2. Do not place the test tape on any measuring instrument.
3. Do not put the test tape near a place where the eraser is used.
4. Method of Demagnetization: — Turn the eraser power switch on at a remote position far away from the heads. Bring the eraser close to the heads, capstan and other parts to be demagnetized, and move it up and down four or five times to demagnetize. Slowly separate the eraser far away from the parts, and turn the power switch off.
5. Do not use any magnetized adjusting tool. When using it, demagnetize it from time to time in the course of each adjustment.
6. Do not turn semi-fixed resistor more than needed.
7. Do not apply locking bond excessively.



7.1 HEAD AZIMUTH ADJUSTMENT

1. Remove the cassette door lid and the escutcheon.
2. Set the TAPE SELECT switch to the NORM position.
3. Play the 14 kHz signal of the test tape MTT 256 back. Adjust the head azimuth adjusting screw for maximum VTVM reading.
4. If the peak output reads of the right and left channels are different, set the screws to obtain the mechanical center between the peaks.
5. After adjustment, repeat the playback and stop setting a few times to make certain of no head azimuth deviation. Then, lock the screws with bond.



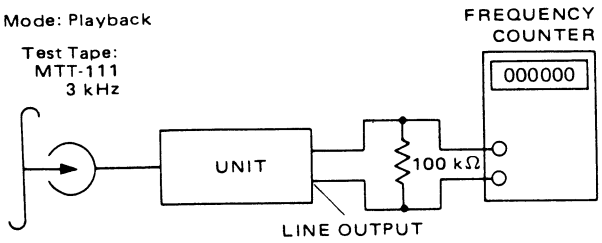


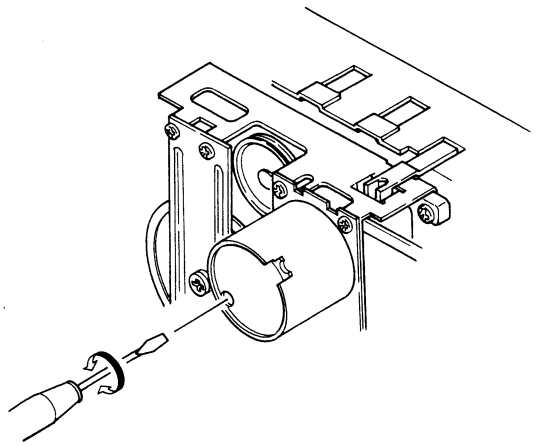
7.2 TAPE SPEED ADJUSTMENT

Play the 3 kHz signal of the test tape MTT-111 back. Adjust the tape speed adjusting resistor inside the motor (M001) for 2990 to 3010 Hz counter indication.

NOTES:

1. **If a strong shock or similar vibration is applied to the deck after adjustment, make certain that the measured tape speed had not changed.**
2. **Be careful that the frequency counter may indicate a wrong value because of too low counter input level.**
3. **Before adjustment, allow for 30 seconds or more after depressing of the PLAY button.**



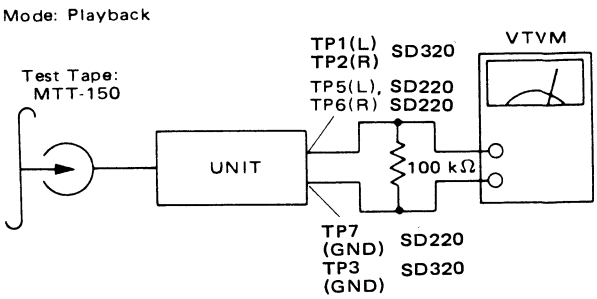


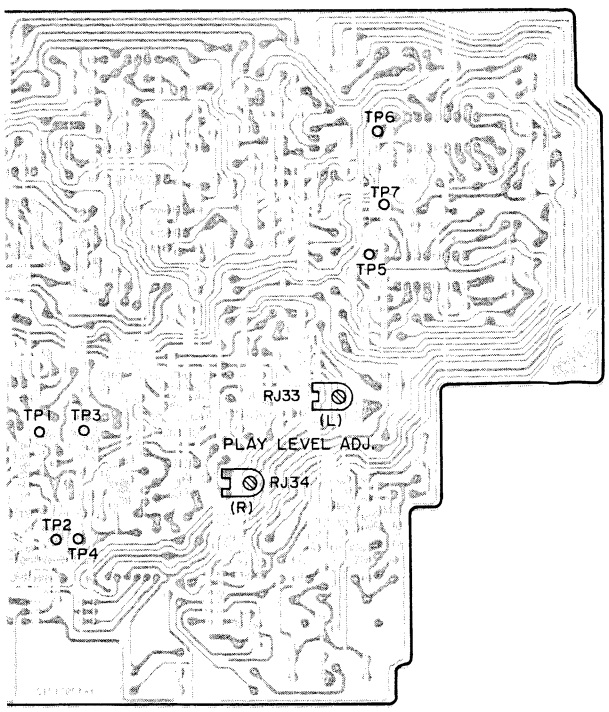
7.3 PLAYBACK OUTPUT LEVEL ADJUSTMENT

1. Set the TAPE SELECT switch to the NORM position.
2. Play back test tape MTT-150. Adjust RJ33(L) and RJ34(R) (50 kΩ) so that the playback output levels are 580 mV (SD220) or 390 mV (SD320) at the test points of TP5(L), TP6(R) and TP7(GND) (SD220) or TP1(L), TP2(R) and TP3(GND) (SD320).

NOTES:

1. **Proceed both for the right and left channels in the same manner.**
2. **This adjustment should be performed after the one for the "Playback Equalizer Adjustment".**

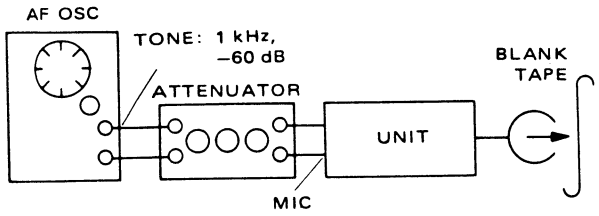


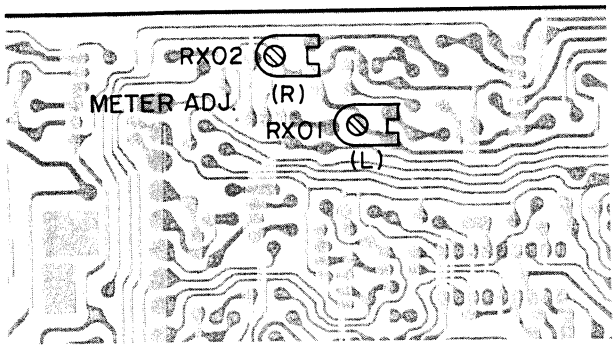


7.4 LED PEAK LEVEL METER ADJUSTMENT

1. Apply a signal of 1 kHz, -60 dB to the MIC jack and set the unit to the recording mode.
2. Connect the VTVM to TP5(L), TP6(R) and TP7 (GND) (SD220) or TP1(L), TP2(R) and TP3(GND) (SD320) and set the REC volume so that the VTVM reading is 580 mV (SD220) or 390 mV (SD320).
3. Reduce the input level by 1.5 dB with the attenuator (-61.5 dB).
4. In this state, adjust RX01(L) and RX02(R) so that the LED PEAK LEVEL METER reading of 0 dB (RED point) disappears.

Mode: Record

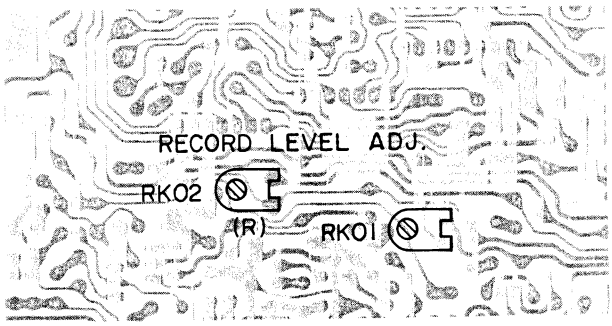




7.5 RECORD-PLAYBACK LEVEL ADJUSTMENT

1. Set the TAPE SELECT button to the NORM position.
2. Connect the 1 kHz, -60 dBV signal to the MIC jack. Set up the deck to the recording state.
3. Connect the VTVM to the line output and set the REC volume so that the Monitor output level is 400 mV.
4. Adjust RK01(L) and RK02(R) so that the LINE output level is the same as the Monitor level when playing back the recorded signal.

Proceed both for the right and left channels in the same manner.



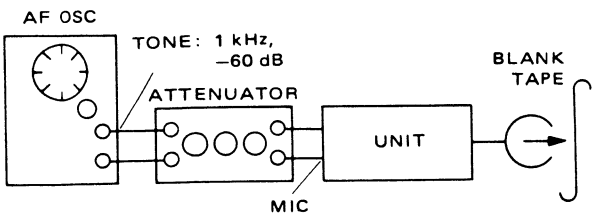
7.6 RECORD-PLAYBACK FREQUENCY RESPONSE ADJUSTMENT

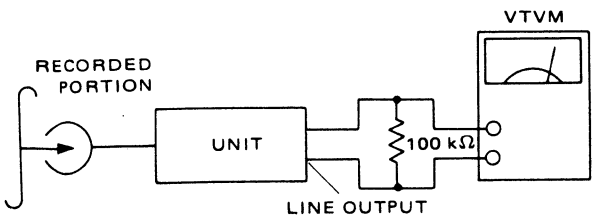
1. Set the TAPE SELECT switch to the NORM position.
2. Apply a signal of 1 kHz, -60 dB to the MIC jack and set the unit to the recording mode.
3. Connect the VTVM to TP5(L), TP6(R) and TP7 (GND) (SD220) or TP1(L), TP2(R) and TP3(GND) (SD320) and set the REC volume so that the VTVM reading is 580 mV (SD220) or 390 mV (SD320). After adjustment, connect the VTVM to the Line output jack.
4. Reduce the input level by 25 dB with the attenuator (-85 dB). Record signals of 1 kHz and 12.5 kHz.
5. Play back each recorded signal. Adjust RL11(L) and RL12(R) until the response at 12.5 kHz is within ± 1 dB with reference to the response of 1 kHz, 0 dB.

(SD320 only)

6. Set the TAPE SELECT switch to the CrO_2 position. Record and play back the signals of 1 kHz and 14 kHz. Adjust RL07 until the response at 14 kHz is within ± 1 dB with reference to the response of 1 kHz, 0 dB.
7. Set the TAPE SELECT switch to the Metal position. Record and play back the signals of 1 kHz and 15 kHz. Adjust RL06 until the response at 15 kHz is within ± 1 dB with reference to the response of 1 kHz, 0 dB.

Mode: Record





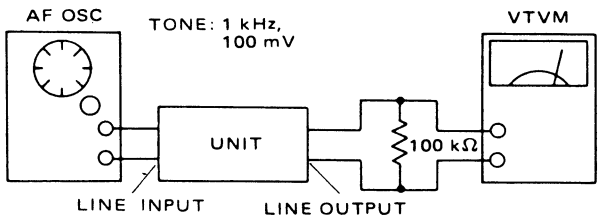
7.7 MPX FILTER ADJUSTMENT

1. Set the TAPE SELECT switch to the NORM position.
2. Connect the 1 kHz, 100 mV input signal to the LINE INPUT cord.
3. Set up the deck to the recording state.
4. Adjust the REC LEVEL control for 0 dB meter reading.
5. Adjust the line output level for 0 dB, and turn the DOLBY NR switch to the ON position.
6. Turn the input signal to the 19 kHz.
7. Adjust L601(L) and L602(R) for minimum output level.

NOTES:

1. **Proceed both for the right and left channels in the same manner.**
2. **If the filter characteristic is better than 30 dB, the MPX filter needs not to be adjusted.**

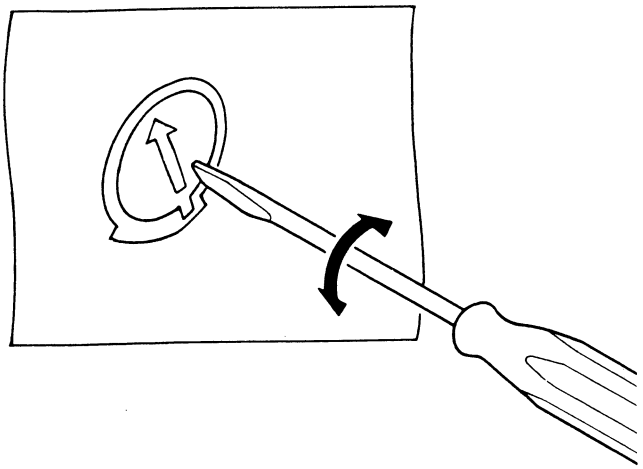
Mode: Record

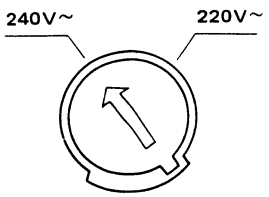


8. VOLTAGE CONVERSION

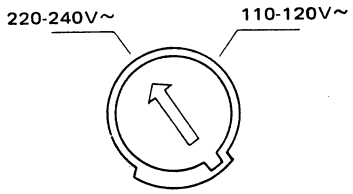
To convert the unit to a different power source voltage, change the position as illustrated in the drawing below.

CAUTION: DISCONNECT POWER SUPPLY CORD FROM AC OUTLET BEFORE CONVERTING VOLTAGE. DO NOT DISASSEMBLE THE VOLTAGE SELECTOR ABSOLUTELY.





(N. A. T.) VERSION



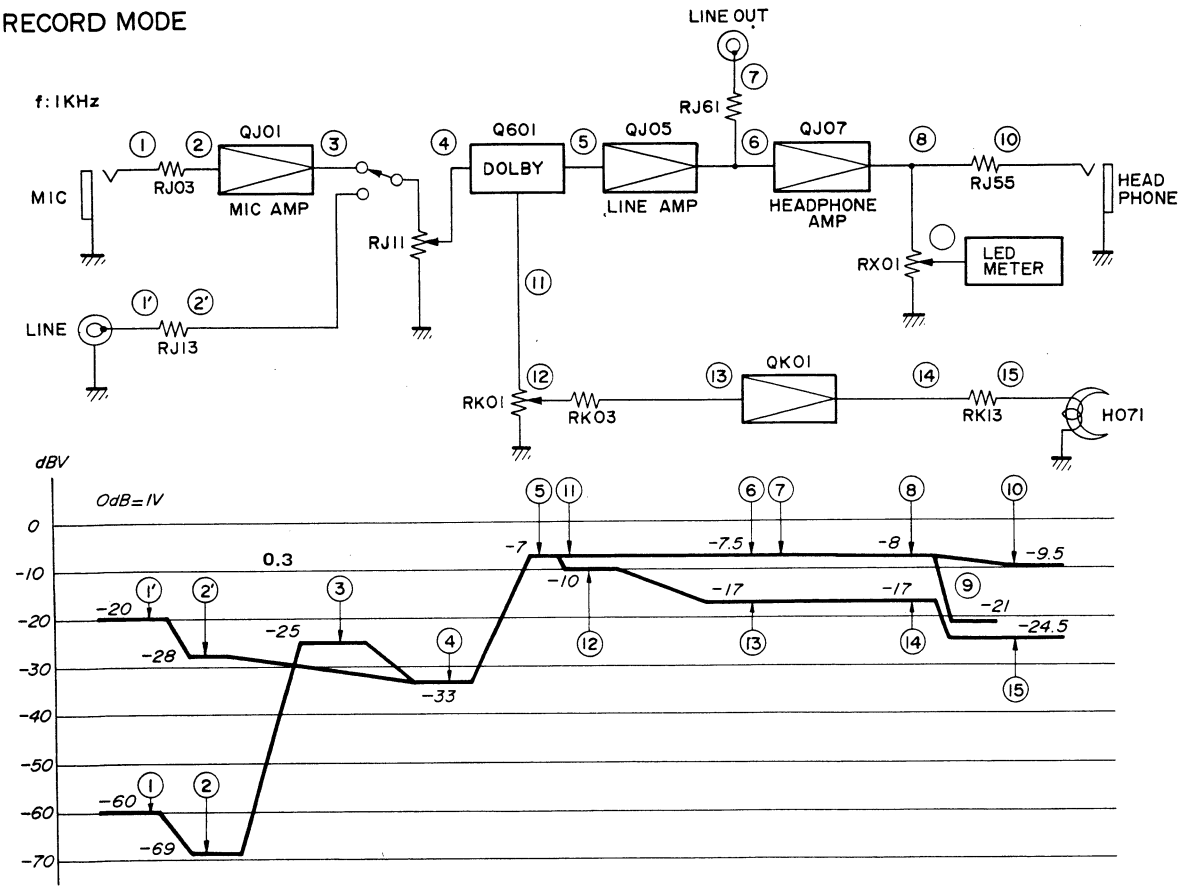
(E) VERSION

NOTE ON SAFETY:
SYMBOL ⚠ FIRE OR ELECTRICAL SHOCK HAZARD. ONLY ORIGINAL PARTS SHOULD BE USED TO REPLACE ANY PART MARKED WITH SYMBOL ⚠. ANY OTHER COMPONENT SUBSTITUTION (OTHER THAN ORIGINAL TYPE), MAY INCREASE RISK OF FIRE OR ELECTRICAL SHOCK HAZARD.

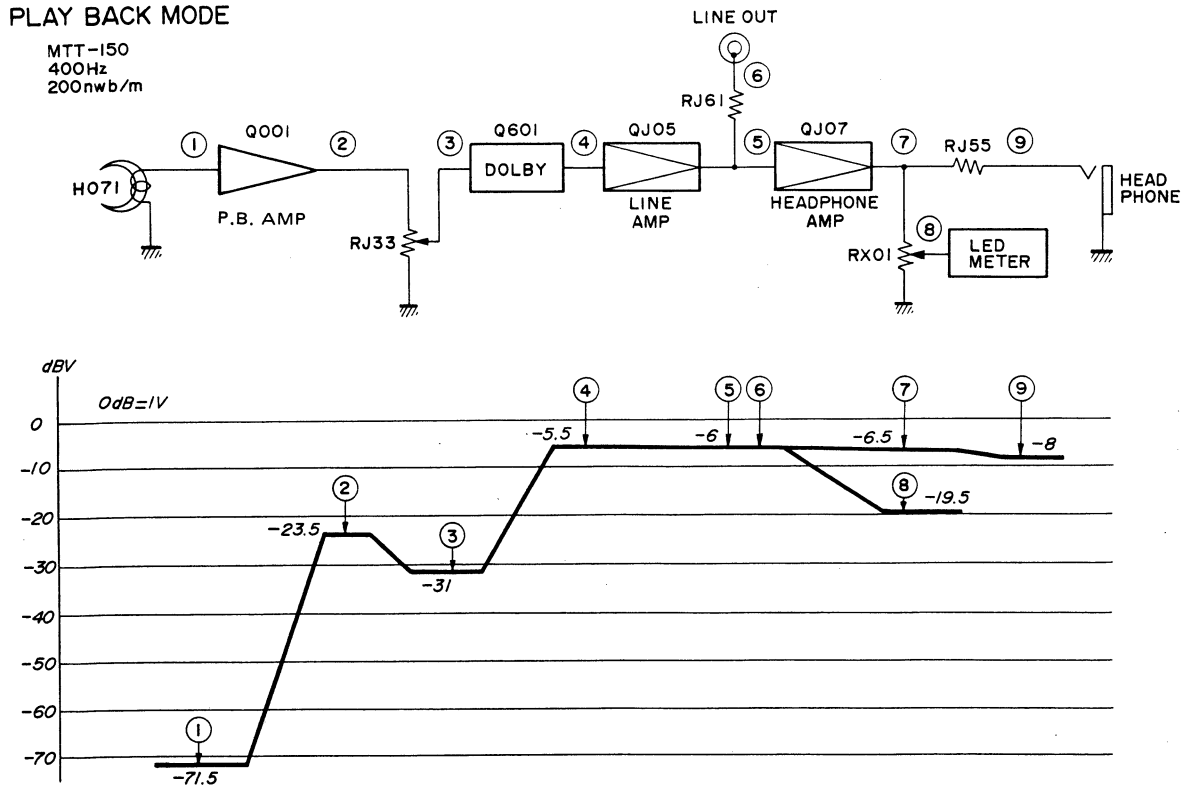
9. DIAGRAMS

9.1 LEVEL DIAGRAMS (SD220)

RECORD MODE



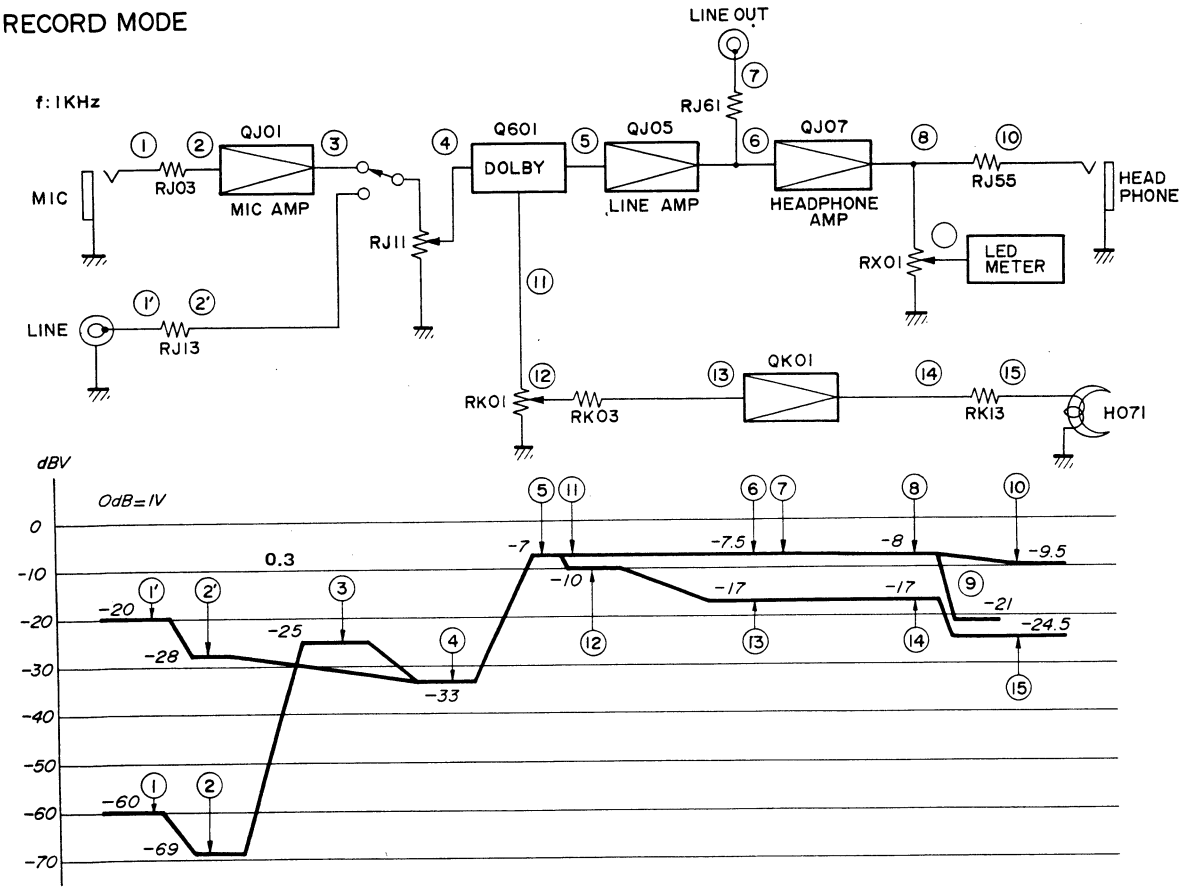
PLAY BACK MODE



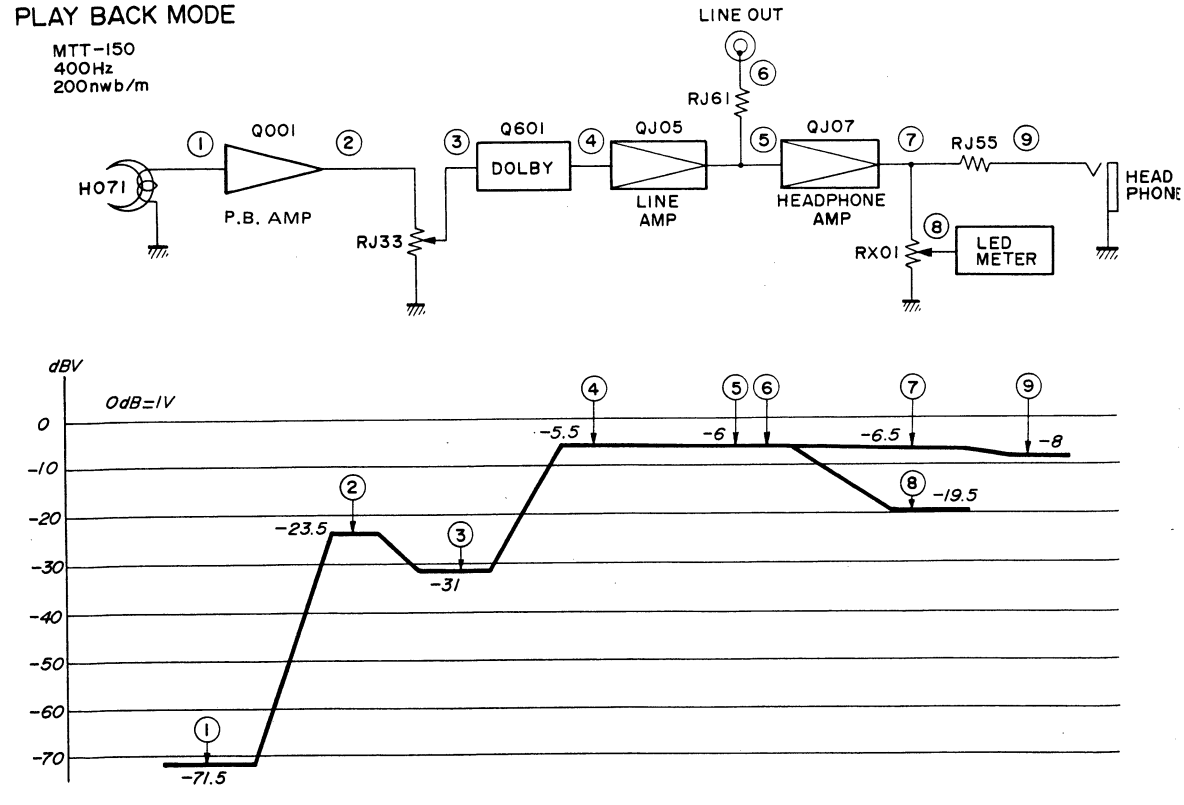
9. DIAGRAMS

9.1 LEVEL DIAGRAMS (SD220)

RECORD MODE

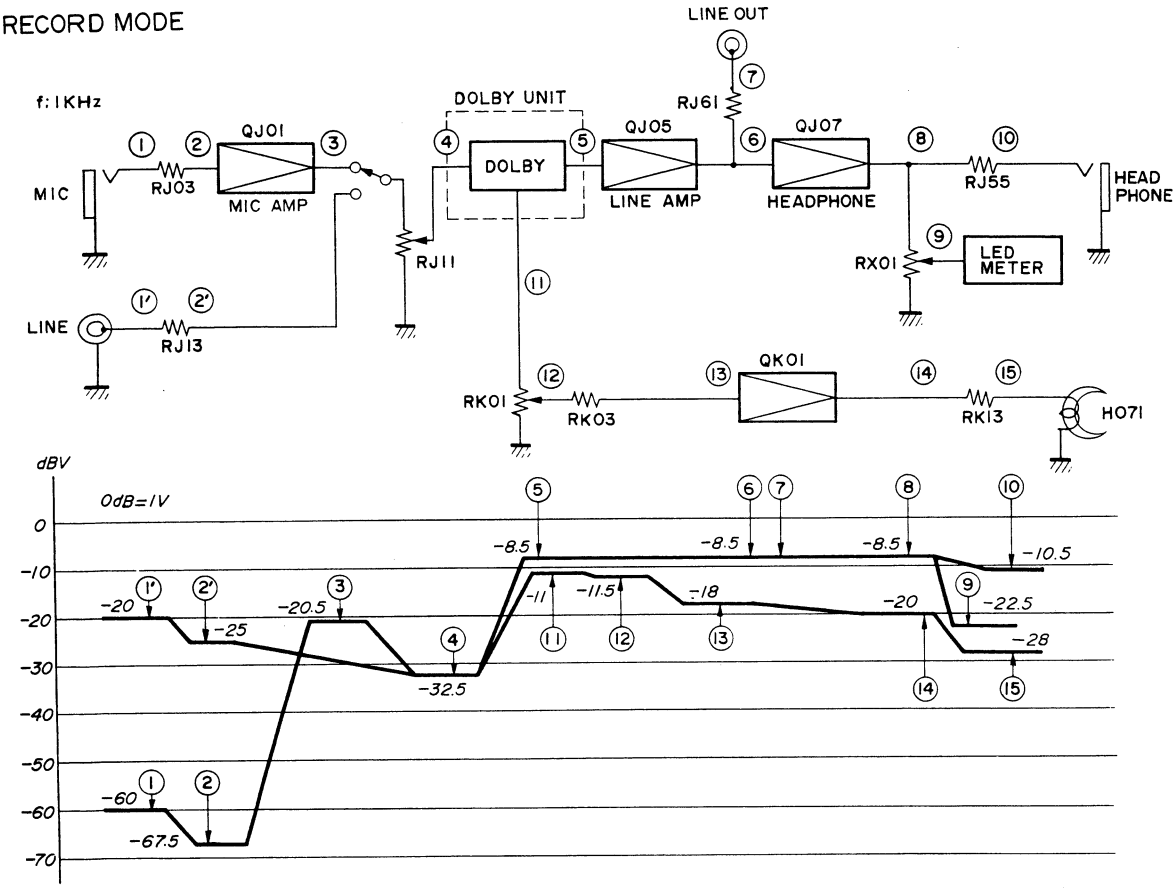


PLAY BACK MODE

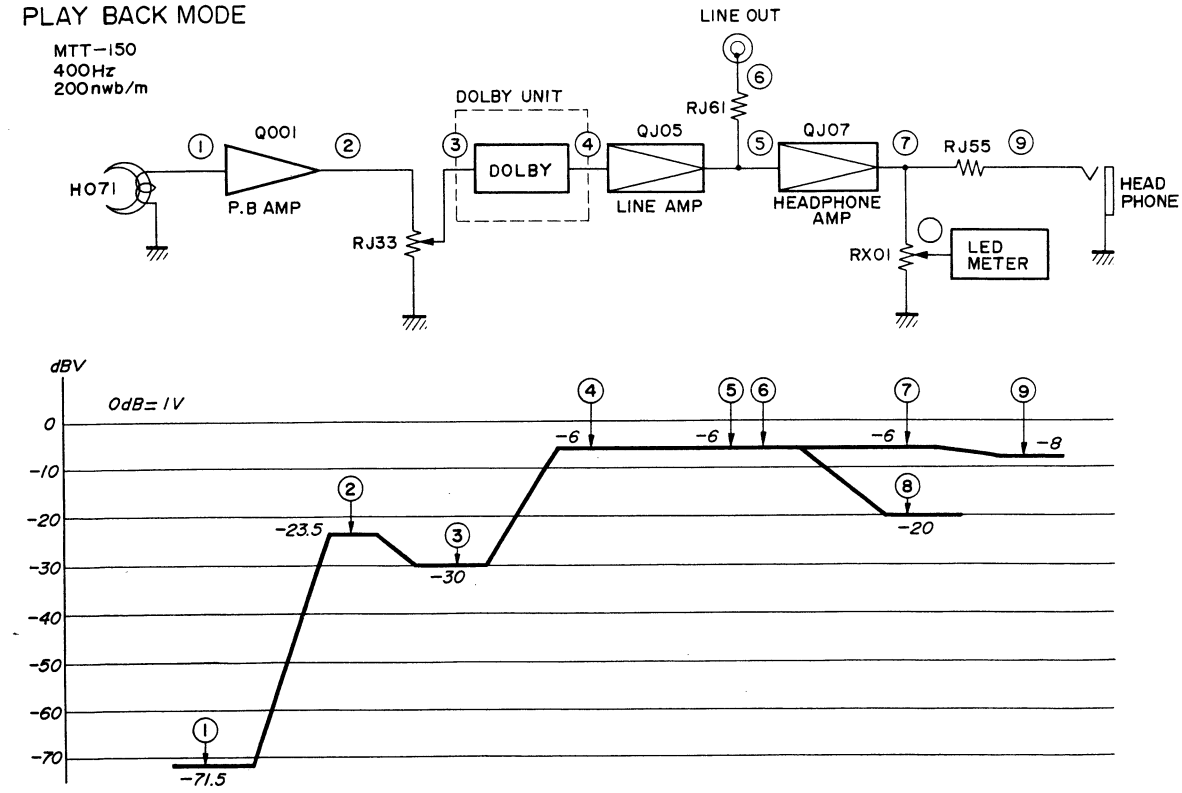


9.2 LEVEL DIAGRAMS (SD320)

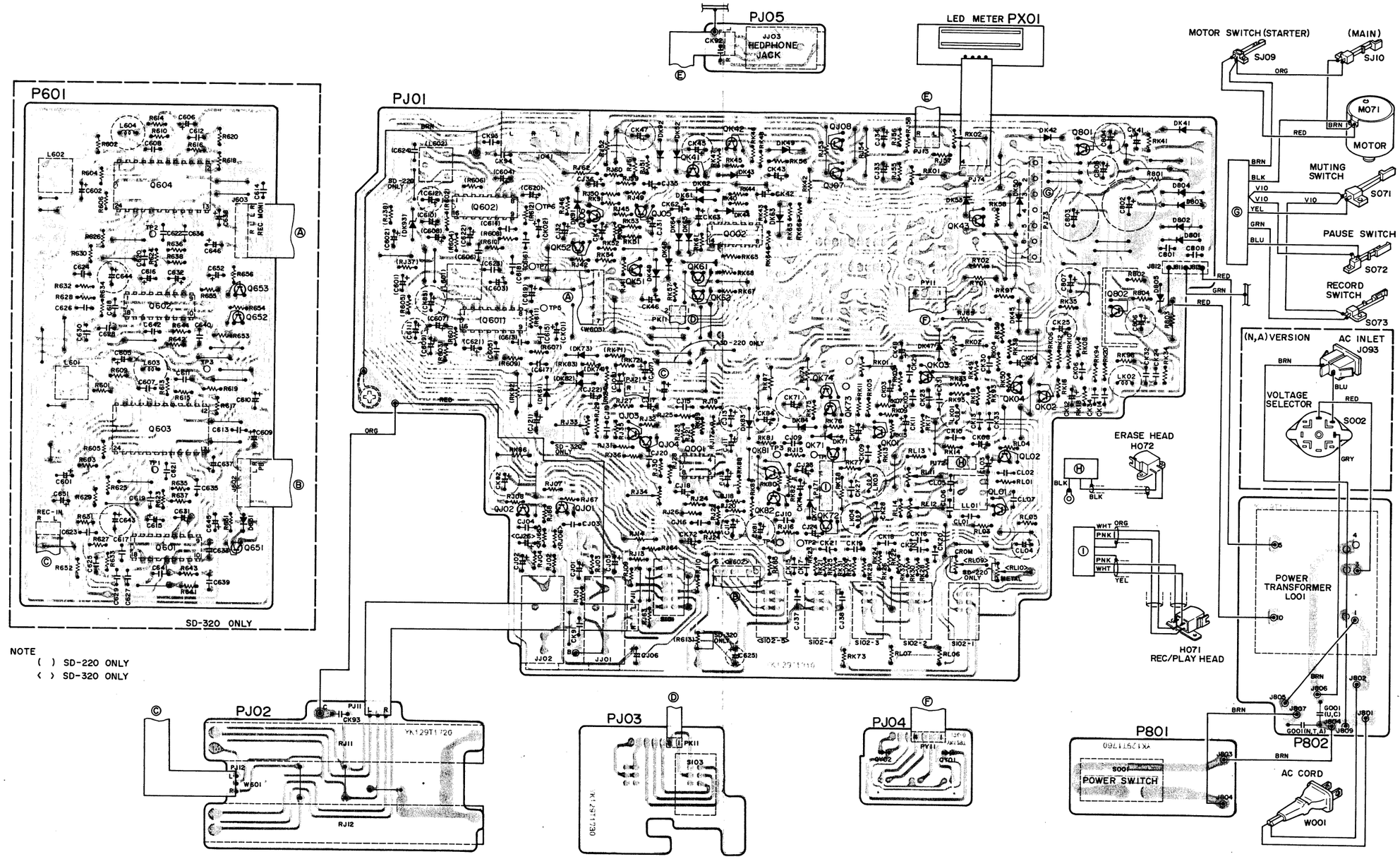
RECORD MODE



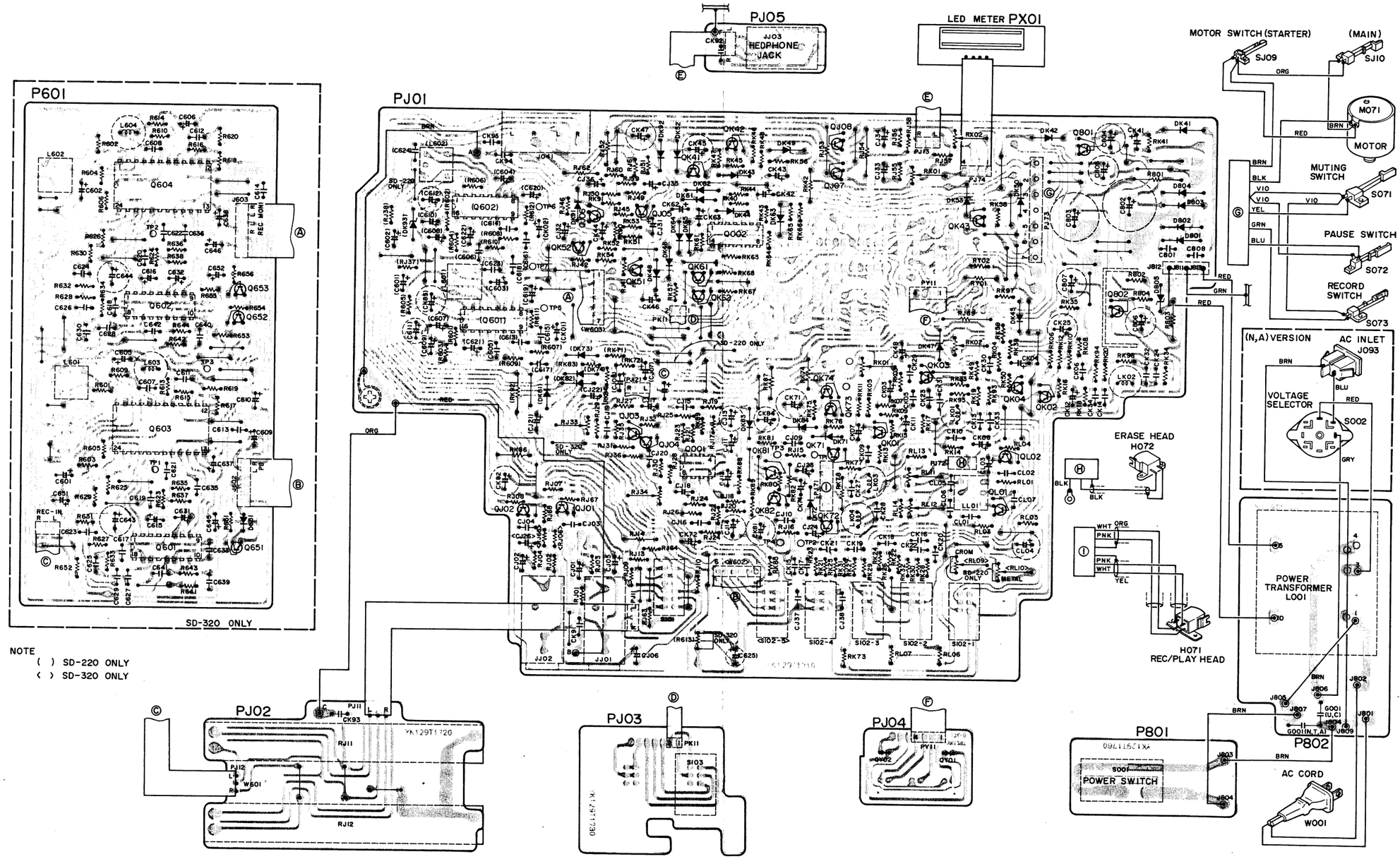
PLAY BACK MODE



9.3 WIRING DIAGRAMS

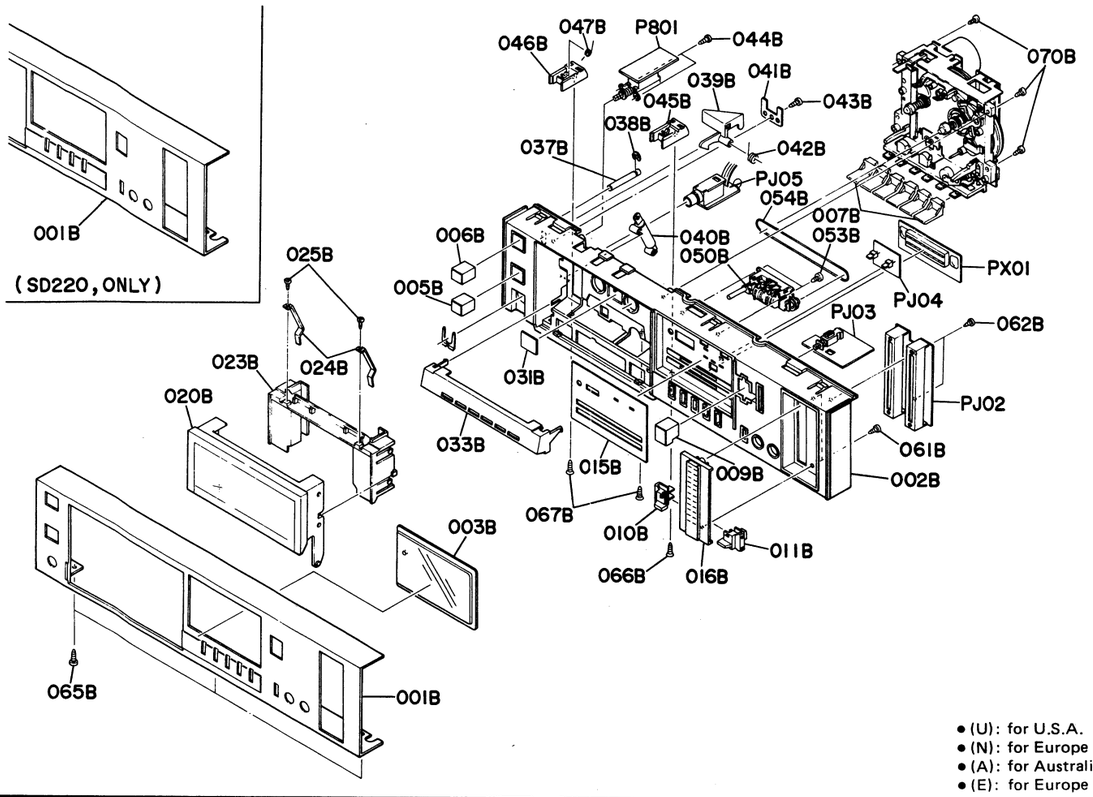


9.3 WIRING DIAGRAMS



10. EXPLODED VIEWS AND PARTS LIST

10.1 [C01-99] FRONT PANEL

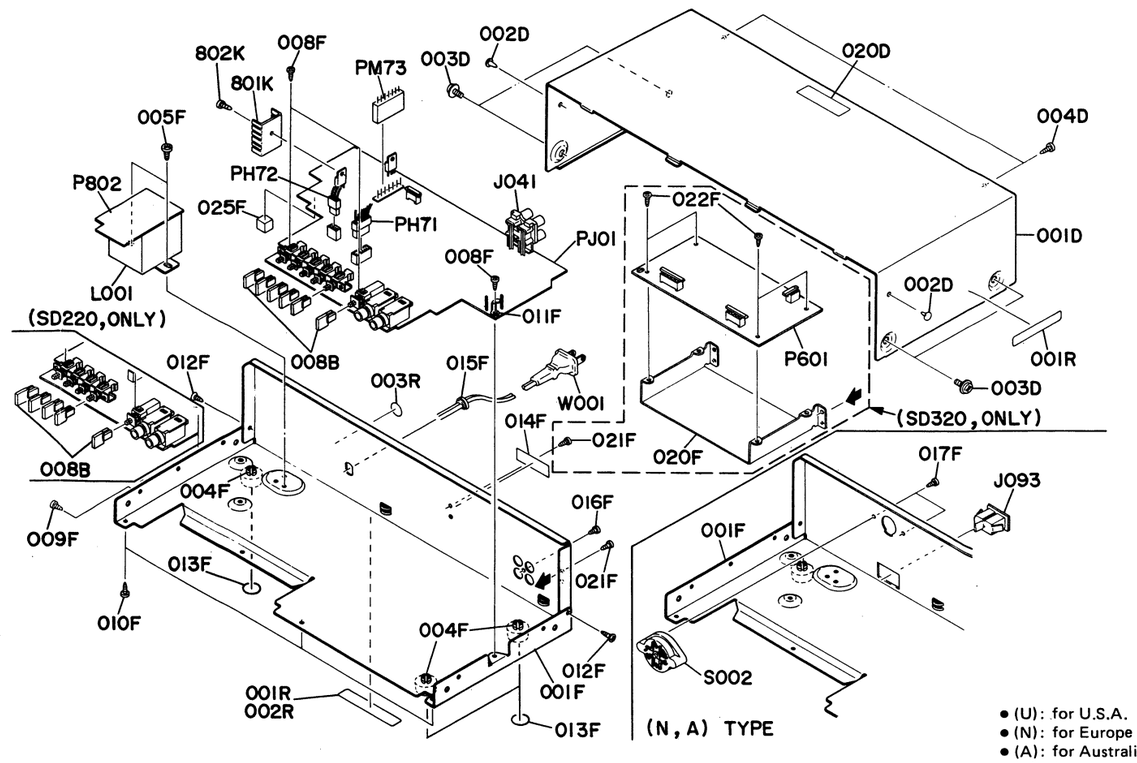


- (U): for U.S.A.
- (N): for Europe
- (A): for Australia
- (E): for Europe

REF. DESIG.	Q'TY U	N	A	PART NO.	DESCRIPTION
					(SD320, ONLY)
A	1	1	1	133T063400	Front Panel Assembly
001B	1	1	1	133T063010	Escutcheon, Front Panel
003B	1	1	1	129T158010	Window
					(SD220, ONLY)
A	1	1	1	129T063400	Front Panel Assembly
001B	1	1	1	129T063400	Escutcheon, Front Panel
003B	1	1	1	129T158010	Window
					(SD320, SD220)
002B	1	1	1	129T063020	Escutcheon, Front Chassis
005B	1	1	1	415H154010	Knob, Power Switch
006B	1	1	1	415H154010	Knob, Eject
007B	6	6	6	129T270010	Button, Cassette
009B	1	1	1	415H154030	Knob, Rec Mute
010B	1	1	1	129T154010	Knob, Slide VR (L)
011B	1	1	1	129T154020	Knob, Slide VR (B)
015B	1	1	1	129T063020	Escutcheon, LED
016B	1	1	1	129T265010	Indicator, Rec Level
020B	1	1	1	129T158500	Window
023B	1	1	1	124T271110	Holder, Door
024B	2	2	2	124T115010	Spring
025B	2	2	2	51302604U0	P.H. Tapped Screw P2.6 x 4
031B	1	1	1	4279274020	Reflector
033B	1	1	1	129T064010	Case, Cassette Knob

REF. DESIG.	Q'TY U	N	A	PART NO.	DESCRIPTION
037B	1	1	1	129T254010	Pin, Eject Knob
038B	1	1	1	64002500R0	RG Ring, E Type
039B	1	1	1	129T002010	Arm, Door Lock
040B	1	1	1	120T276010	Piston, Door Dumper
041B	1	1	1	124T104030	Retainer
042B	1	1	1	124T115030	Spring
043B	1	1	1	51280308B0	B.H. Tapped Screw B3 x 8
044B	2	2	2	51280308B0	B.H. Tapped Screw B3 x 8
045B	1	1	1	124T104020	Retainer, (R)
046B	1	1	1	124T104040	Retainer, (L)
047B	1	1	1	124T115030	Spring, Door Open
050B	1	1	1	129T052500	Counter
053B	2	2	2	51282608B0	B.H. Tapped Screw B2.6 x 8
054B	1	1	1	129T264010	Belt
061B	2	2	2	51280308B0	B.H. Tapped Screw B3 x 8
062B	2	2	2	51280308B0	B.H. Tapped Screw B3 x 8
065B	3	3	3	51280308B0	B.H. Tapped Screw B3 x 8
066B	1	1	1	51500310B0	F.H. Taptite Screw F3 x 10
067B	2	2	2	51500310B0	F.H. Taptite Screw F3 x 10
070B	3	3	3	51280312B0	B.H. Tapped Screw B3 x 12

10.2 [C02-99] TOP COVER AND MAIN CHASSIS



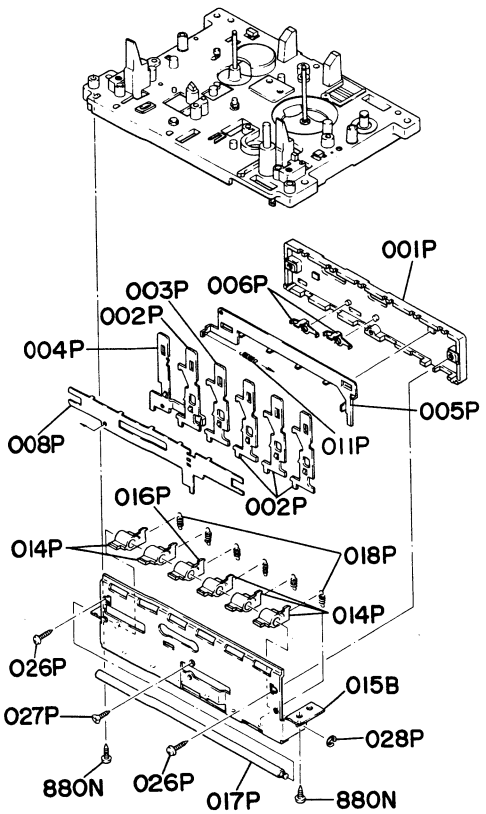
- (U): for U.S.A.
- (N): for Europe
- (A): for Australia
- (E): for Europe

REF. DESIG.	Q'TY U	N	A	PART NO.	DESCRIPTION
008B	6	6	6	129T154030	Knob, Push Switch (SD320, only)
008B	5	5	5	129T154030	Knob, Push Switch (SD220, only)
001D	1	1	1	129T257010	Lid, Top Cover
002D	2	2	2	2991259110	Bushing
003D	4			51260408Z0	B.T. Screw B4 x 8
003D		4	4	51260408U0	B.T. Screw B4 x 8
004D	2			51280308Z0	B.H. Tapped Screw B3 x 8
004D		2	2	51280308U0	B.H. Tapped Screw B3 x 8
020D	1			113T861010	Label
001F				133T105040	Chassis, Rear Panel (SD320, (E) only)
001F				129T105040	Chassis, Rear Panel (SD220) (E)
001F	1			133T105010	Chassis, Rear Panel (SD320, only)
001F		1	1	133T105020	Chassis, Rear Panel (SD320, only)
001F	1			129T105010	Chassis, Rear Panel (SD220, only)
001F		1	1	129T105020	Chassis, Rear Panel (SD220, only)
004F	3	3	3	001T057010	Leg
005F	2	2	2	51280406B0	B.H. Tapped Screw B4 x 6
008F	3	3	3	51280308B0	B.H. Tapped Screw B3 x 8
010F	3	3	3	51280308B0	B.H. Tapped Screw B3 x 8
011F	1	1	1	62030049W0	Lug
012F	2	2	2	51500306B0	F.H. Taptite Screw F3 x 6
014F	1	1	1	2112265010	Indicator
015F	1			1455259030	Bushing, AC Cord
016F	1	1	1	51280308B0	B.H. Tapped Screw B3 x 8
017F		2	2	51280308B0	B.H. Tapped Screw B3 x 8
020F	1	1	1	133T160020	Bracket (SD320, only)
021F	2	2	2	51280308B0	B.H. Tapped Screw B3 x 8
022F	4	4	4	51280308B0	B.H. Tapped Screw B3 x 8
025F	1	1	1	4292056020	Buffer

REF. DESIG.	Q'TY U	N	A	PART NO.	DESCRIPTION
801K	1	1	1	202H267030	Heatsink
802K	1	1	1	51280306B0	B.H. Tapped Screw B3 x 6
001R	2			117H861010	Label
001R		1	1	2932861110	Label
002R		1	1	2578861010	Label
003R	1			9511101070	Label, UL
PH71	1	1	1	YB00400250	Connective Cord, (6P)
PH72	1	1	1	YB00400260	Connective Cord, (3P)
PM73	1	1	1	YJ06001060	Jack, (7P)
J041	1			YT02040480	Terminal, RCA Pin (4P)
J041		1	1	YT02040470	Terminal, RCA Pin (4P)
⚠J093		1	1	YP04000580	Plug, AC Inlet
⚠L001				TS14820070	Power Transformer (SD320)(E)
⚠L001	1			TS14820010	Power Transformer (SD320, only)
⚠L001		1	1	TS14820050	Power Transformer (SD320, only)
⚠L001	1			TS14133060	Power Transformer (SD220, only)
⚠L001		1	1	TS14133050	Power Transformer (SD220, only)
⚠L001				TS14133070	Power Transformer (SD220)(E)
⚠S002		1	1	BY05030040	Voltage Selector
⚠S002				BY05060040	Voltage Selector (E)
⚠W001	1			YC01900070	A.C. Power Cord
009F	1	1	1	51280308B0	B.H. Tapped Screw B3 x 8
028F		1	1	4581861010	Label, Made in Japan
013F	4	4	4	413H060010	Clinger

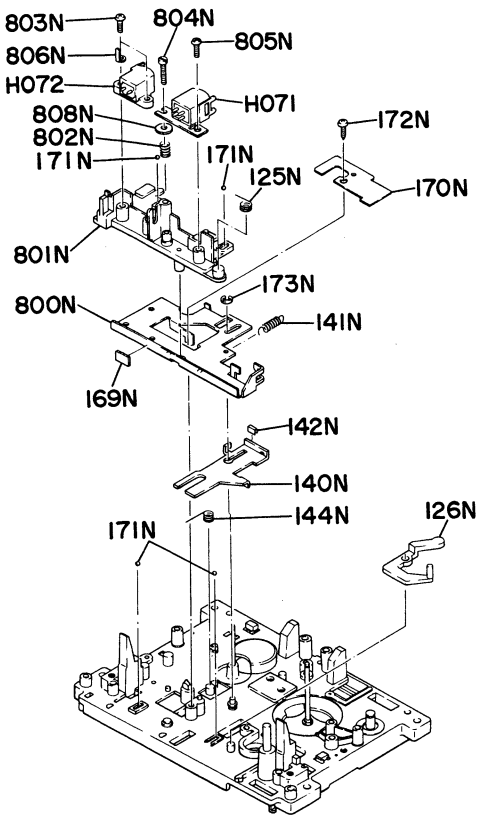
10.3 [P01-99] OPERATION LEVERS

- (U): for U.S.A.
- (N): for Europe
- (A): for Australia
- (E): for Europe



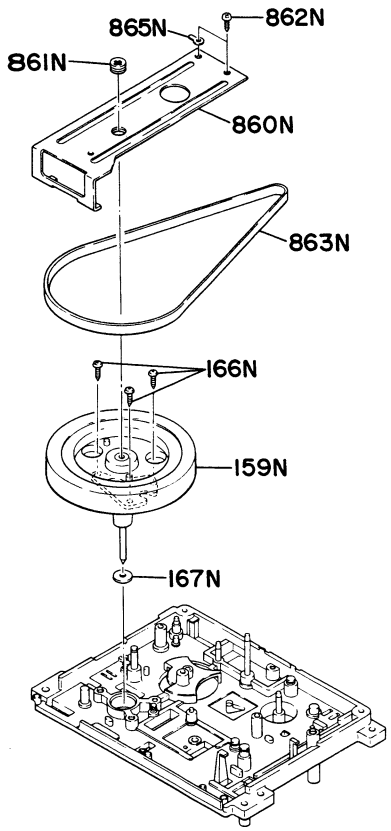
REF. DESIG.	Q'TY U	N	A	PART NO.	DESCRIPTION	
001P	1	1	1	307Y051010	Guide	
002P	4	4	4	307Y354130	Lever	
003P	1	1	1	307Y354140	Lever, Play	
004P	1	1	1	307Y354150	Lever, Rec	
005P	1	1	1	307Y354110	Lever, Starter	
006P	2	2	2	307Y002120	Arm	
008P	1	1	1	307Y054020	Cam Button Lock	
011P	1	1	1	307Y115260	Spring, Lock Cam	
014P	5	5	5	307Y002230	Arm	
015P	1	1	1	307Y160020	Bracket	
016P	1	1	1	307Y002040	Arm, Play	
017P	1	1	1	307Y112070	Shaft	
018P	6	6	6	307Y115120	Spring	
026P	2	2	2	5130260880	P.H. Tapped Screw	P2.6 x 8
027P	1	1	1	5150260680	F.H. Tapped Screw	F2.6 x 6
028P	1	1	1	64002500R0	RG Ring, E Type	
880N	2	2	2	51300308B0	P.H. Tapped Screw	P3 x 8

10.4 [P02-99] HEAD CHASSIS



REF. DESIG.	Q'TY U	N	A	PART NO.	DESCRIPTION	
125N	1	1	1	307Y115230	Spring	
126N	1	1	1	307Y002020	Arm, Take-up	
140N	1	1	1	307Y354090	Lever	
141N	1	1	1	307Y115110	Spring	
142N	1	1	1	307Y056020	Buffer	
144N	1	1	1	307Y115060	Spring	
169N	1	1	1	307Y056010	Buffer	
170N	1	1	1	307Y115300	Spring	
171N	4	4	4	61020010T0	Ball	
172N	1	1	1	51302606B0	P.H. Tapped Screw	P2.6 x 6
173N	1	1	1	64001500R0	RG Ring, E Type	
800N	1	1	1	307Y105020	Chassis, Head	
801N	1	1	1	307Y160100	Bracket	
802N	1	1	1	4380115090	Spring, Azimuth	
803N	2	2	2	51100214A0	B.H.M. Screw	B2 x 14
804N	1	1	1	51190213A2	P.H.M. Screw	B2 x 13
805N	1	1	1	51100214A0	B.H.M. Screw	B2 x 14
806N	1	1	1	62021030W0	Lug	
808N	1	1	1	3444118070	Spacer	
809N	1	1	1	307Y115290	Spring	
H071	1	1	1	LH42851100	Rec/Paly Head	
H072	1	1	1	LH31000580	Erase Head	

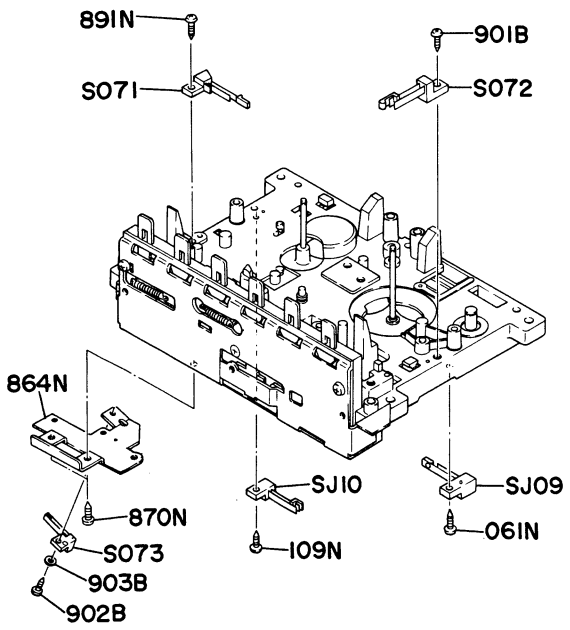
10.5 [P03-99] FLYWHEEL



- (U): for U.S.A.
- (N): for Europe
- (A): for Australia
- (E): for Europe

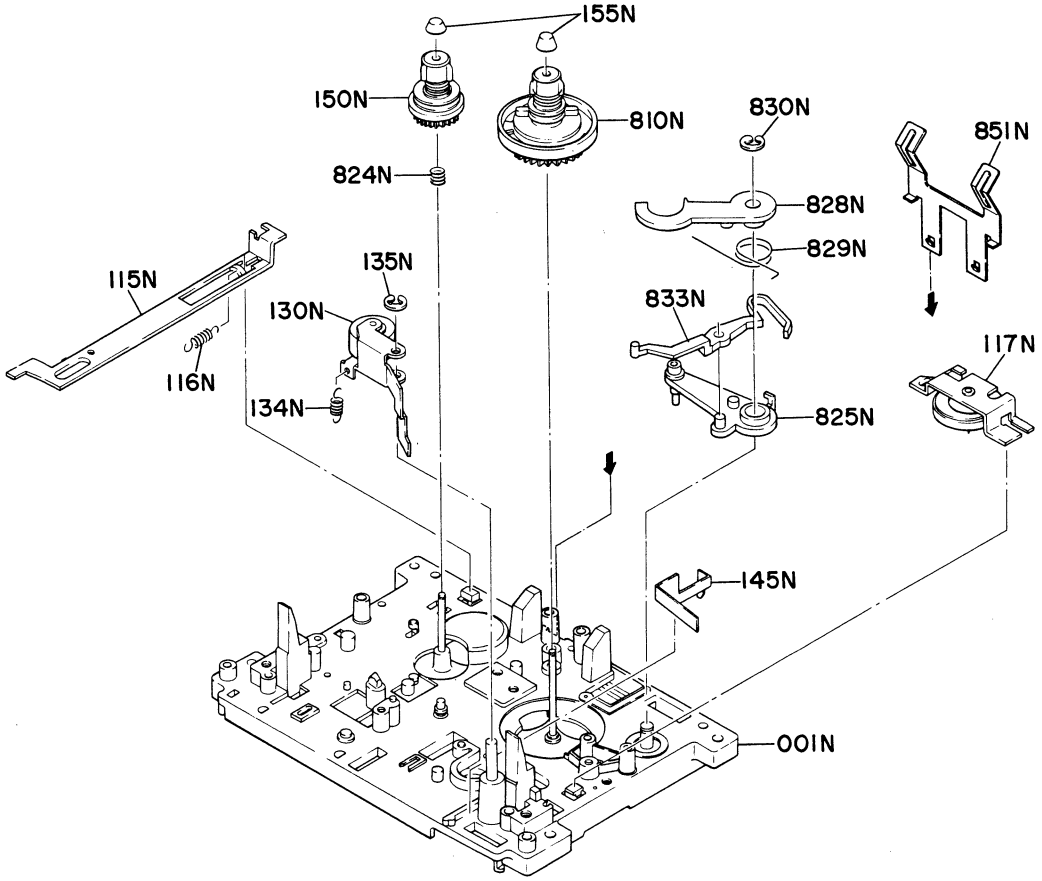
REF. DESIG.	Q'TY U	N	A	PART NO.	DESCRIPTION	
159N	1	1	1	307Y273400	Flywheel Assembly	
166N	3	3	3	5130260880	P.H. Tapped Screw	P2.6 x 8
167N	1	1	1	306Y118010	Spacer	
860N	1	1	1	307Y104010	Retainer	
861N	1	1	1	307Y164010	Adjuster	
862N	2	2	2	5157260480	P. Taptite Screw	P2.6 x 4
863N	1	1	1	4380264030	Belt, Motor	
865N	1	1	1	62031340W0	Lug	

10.6 [P04-99] SWITCH LOCATION



REF. DESIG.	Q'TY U	N	A	PART NO.	DESCRIPTION	
901B	1	1	1	51382308P0	B.H.M. Screw	B2 x 5
902B	1	1	1	51100205A0	B.H.M. Screw	B2 x 5
903B	1	1	1	54020201E0	Flat Washer, P.	
061N	1	1	1	51060204A0	P.H.M. Screw	P2 x 4
109N	1	1	1	5130260880	P.H. Tapped Screw	P2.6 x 8
864N	1	1	1	307Y160080	Bracket	
870N	2	2	2	5157260480	P. Taptite Screw	P2.6 x 4
891N	1	1	1	5130260880	P.H. Tapped Screw	P2.6 x 8
S071	1	1	1	SM01010750	Mini Switch, Muting	
S072	1	1	1	SM01010900	Mini Switch, Pause	
S073	1	1	1	SM01010910	Mini Switch, Rec	
SJ09	1	1	1	SM01010850	Mini Switch, Starter	
SJ10	1	1	1	SM01010870	Mini Switch, Motor	

10.7 [P05-99] PARTS ASSEMBLED ON TOP OF CHASSIS

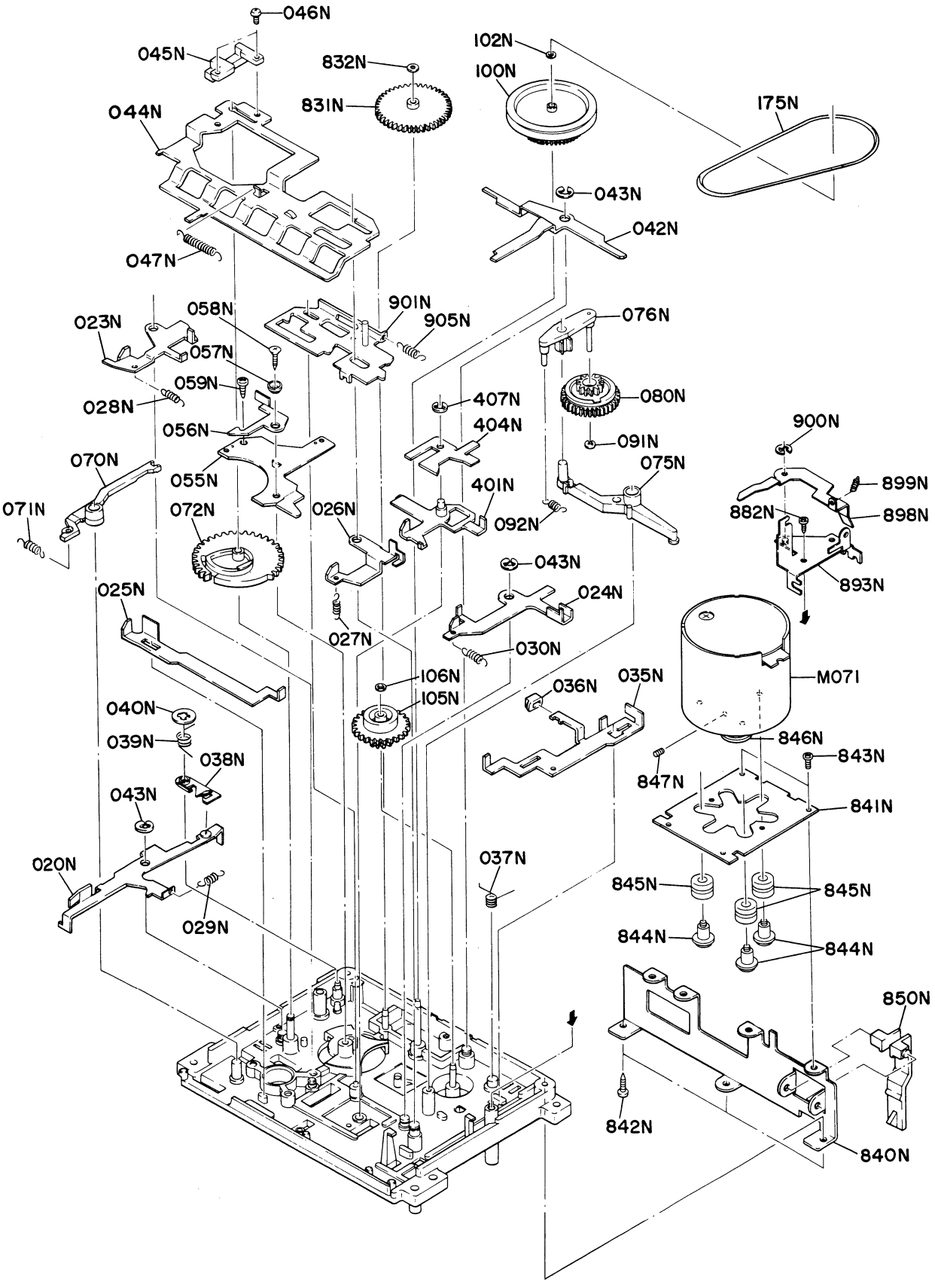


- (U): for U.S.A.
- (N): for Europe
- (A): for Australia
- (E): for Europe

REF. DESIG.	Q'TY U	N	A	PART NO.	DESCRIPTION
001N	1	1	1	307Y105400	Chassis Assembly, Main
115N	1	1	1	307Y354190	Lever, Rec Safety
116N	1	1	1	307Y115140	Spring
117N	1	1	1	307Y354410	Lever, Assembly, Take-up
130N	1	1	1	307Y002410	Arm Assembly, Pinch Roller
134N	1	1	1	307Y115100	Spring
135N	1	1	1	64002500R0	RG Ring, E Type
145N	1	1	1	307Y115040	Spring
150N	1	1	1	307Y004400	Table Assembly, Supply
155N	2	2	2	4367067010	Cap

REF. DESIG.	Q'TY U	N	A	PART NO.	DESCRIPTION
810N	1	1	1	307Y004410	Table Assembly, Tape-up
824N	1	1	1	307Y115250	Spring
825N	1	1	1	307Y002430	Arm Assembly, TMS
828N	1	1	1	307Y002060	Arm, TMS Senser
829N	1	1	1	307Y115070	Spring
830N	1	1	1	307Y114020	Stopper
833N	1	1	1	307Y002210	Arm, TMS
851N	1	1	1	307Y115020	Spring, Cassette

10.8 [P06-99] PARTS ASSEMBLED ON REVERSE OF CHASSIS

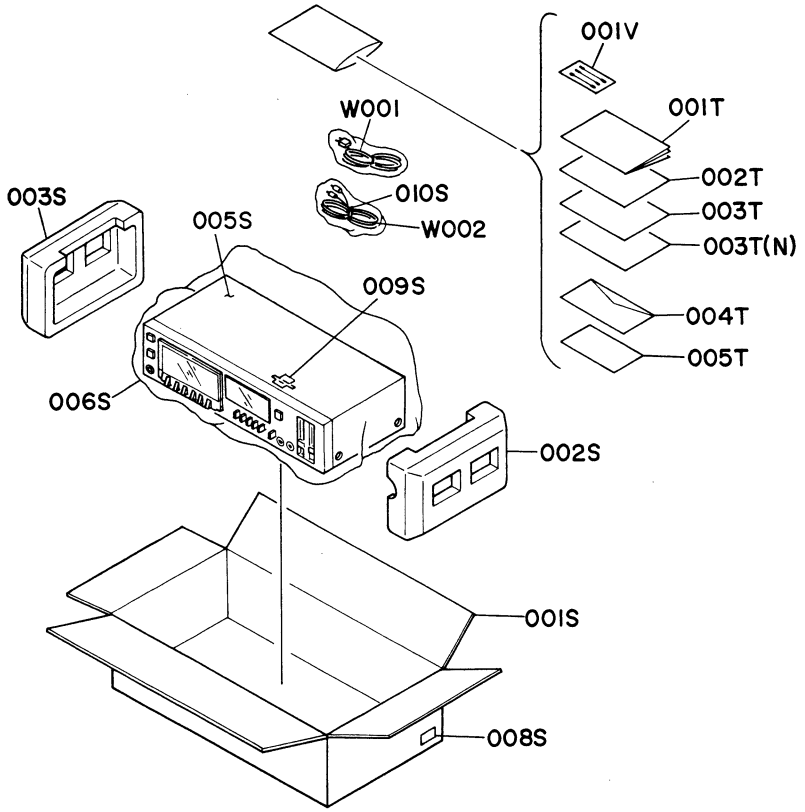


- (U): for U.S.A.
- (N): for Europe
- (A): for Australia
- (E): for Europe

REF. DESIG.	Q'TY U	N	A	PART NO.	DESCRIPTION
020N	1	1	1	307Y354400	Lever Assembly, Pause
023N	1	1	1	307Y354020	Lever, FF
024N	1	1	1	307Y354030	Lever, REW
025N	1	1	1	307Y354050	Lever, Stop
026N	1	1	1	307Y354040	Lever, Rec
027N	1	1	1	307Y115210	Spring
028N	1	1	1	307Y115240	Spring
029N	1	1	1	307Y115240	Spring
030N	1	1	1	307Y115160	Spring
035N	1	1	1	307Y354070	Lever, Brake
036N	1	1	1	4367263010	Brake
037N	1	1	1	307Y115090	Spring
038N	1	1	1	307Y054040	Camp, Pause Lock
039N	1	1	1	307Y115080	Spring
040N	1	1	1	64020300Q0	RG Ring, CS Type
042N	1	1	1	307Y002240	Arm
043N	3	3	3	64000300R0	RG Ring, E Type
044N	1	1	1	307Y127010	Control Board
045N	1	1	1	307Y114010	Stopper
046N	2	2	2	51572604B0	P. Taptite Screw P2.6 x 4
047N	1	1	1	307Y115150	Spring
055N	1	1	1	307Y160030	Bracket, Starter SW.
056N	1	1	1	307Y002110	Arm
057N	1	1	1	307Y259010	Bushing
058N	1	1	1	51302608B0	P.H.M. Screw P2.6 x 8
059N	1	1	1	51302608B0	P.H.M. Screw P2.6 x 8
070N	1	1	1	307Y002030	Arm
071N	1	1	1	307Y115140	Spring
072N	1	1	1	307Y058050	Gear, Drive
075N	1	1	1	307Y002080	Arm, REW
076N	1	1	1	307Y002400	Arm Assembly, FF/REW
080N	1	1	1	307Y058400	Gear Assembly
091N	1	1	1	64001500R0	RG Ring, E Type
092N	1	1	1	307Y115200	Spring
100N	1	1	1	307Y262020	Pulley
102N	1	1	1	307Y118010	Spacer
105N	1	1	1	307Y058040	Gear, REW
106N	1	1	1	307Y118010	Spacer
175N	1	1	1	307Y264020	Belt
401N	1	1	1	307Y354430	Lever Assembly, Play
404N	1	1	1	307Y354100	Lever, Brake
407N	1	1	1	64002500R0	RG Ring, E Type
831N	1	1	1	307Y058060	Gear, TMS

REF. DESIG.	Q'TY U	N	A	PART NO.	DESCRIPTION
832N	1	1	1	307Y118010	Spacer
840N	1	1	1	307Y160040	Bracket
841N	1	1	1	307Y160050	Bracket, Motor
842N	3	3	3	51300308B0	P.H. Tapped Screw P3 x 8
843N	2	2	2	51572604B0	P. Taptite Screw P2.6 x 4
844N	3	3	3	4367112150	Shaft
845N	3	3	3	4383259010	Bushing
846N	1	1	1	307Y262050	Pulley, Motor
847N	1	1	1	51690305Q9	Socket Screw, HP M3 x 5
850N	1	1	1	307Y002090	Arm, Rec Safety
882N	1	1	1	51300308B0	P.H. Tapped Screw P3 x 8
893N	1	1	1	307Y104400	Retainer Assembly
898N	1	1	1	307Y002190	Arm
899N	1	1	1	307Y115140	Spring
900N	1	1	1	64002500R0	RG Ring, E Type
901N	1	1	1	307Y054410	Cam Assembly, Lock
905N	1	1	1	4367115120	Spring
M071	1	1	1	MM11200170	D.C. Motor, Governor 2200rpm

10.9 [H01-99] PACKING MATERIALS



- (U): for U.S.A.
- (N): for Europe
- (A): for Australia
- (E): for Europe

REF. DESIG.	Q'TY U	N	A	PART NO.	DESCRIPTION
001S	1			133T801010	Packing Case (SD320, only)
001S		1	1	133T801020	Packing Case (SD320, only)
001S	1			129T801010	Packing Case (SD220, only)
001S		1	1	129T801020	Packing Case (SD220, only)
002S	1	1	1	129T809010	Cushion, (R)
003S	1	1	1	129T809020	Cushion, (L)
005S	1	1	1	2918107360	Sheet
006S	1	1	1	9090909030	Polyethylene Sheet
008S	2			9526019010	Serial No. Card
008S		4		9526019060	Serial No. Card
008S			4	9526019030	Serial No. Card
009S		1		2731821010	Silicagel
010S	1	1	1	402P005040	Clamper

REF. DESIG.	Q'TY U	N	A	PART NO.	DESCRIPTION
001T	1			129T851210	Instructions
001T		1	1	129T851310	Instructions
002T	1			133T851220	Instructions, Spec (SD320, only)
002T		1	1	133T851320	Instructions, Spec (SD320, only)
002T	1			129T851220	Instruction, Spec (SD220, only)
002T		1	1	129T851320	Instruction, Spec (SD220, only)
003T	1			130H854010	Guarantee Card
003T		1		133T856010	Circuit Diagram (SD320, only)
003T		1		129T856010	Circuit Diagram (SD320, only)
003T			1	9631000090	Guarantee Card
004T	1			2225813010	Envelope
005T	1			9560000100	Hang Tag
001V	1	1	1	4136071010	Cleaner
⚠W001		1		ZC01805010	A.C. Power Cord
⚠W001			1	ZC02006020	A.C. Power Cord
W002	2	2	2	ZD01000170	Connective Cord

10.10 ELECTRICAL PARTS LIST

- (U): for U.S.A.
- (N): for Europe
- (A): for Australia
- (E): for Europe

REF. DESIG.	Q'TY U	Q'TY N	Q'TY A	PART NO.	DESCRIPTION
					(SD320, ONLY)
					P601-DOLBY B-C NR CIRCUIT BOARD
P601	1	1	1	YK133T0410	P.W. Board, Dolby B-C NR
	1	1	1	ZZ133T0410	P.W. Board Assembly
					P601-CAPACITORS
C601	1	1	1	EA10505030	Elect 1μF 50V
C602	1	1	1	EA10505030	Elect 1μF 50V
C605	1	1	1	EA10602530	Elect 10μF 25V
C606	1	1	1	EA10602530	Elect 10μF 25V
C607	1	1	1	DF15182300	Film 1800pF ±5%
C608	1	1	1	DF15182300	Film 1800pF ±5%
C609	1	1	1	EA10505030	Elect 1μF 50V
C610	1	1	1	EA10505030	Elect 1μF 50V
C611	1	1	1	DF15103350	Film 0.01μF ±5%
C612	1	1	1	DF15103350	Film 0.01μF ±5%
C613	1	1	1	DD15470370	Ceramic 47pF ±5%
C614	1	1	1	DD15470370	Ceramic 47pF ±5%
C615	1	1	1	EA10602530	Elect 10μF 25V
C616	1	1	1	EA10602530	Elect 10μF 25V
C617	1	1	1	DF15473350	Film 0.047μF ±5%
C618	1	1	1	DF15473350	Film 0.047μF ±5%
C619	1	1	1	DF15472300	Film 4700pF ±5%
C620	1	1	1	DF15472300	Film 4700pF ±5%
C621	1	1	1	DF15333350	Film 0.033μF ±5%
C622	1	1	1	DF15333350	Film 0.033μF ±5%
C623	1	1	1	DF15683350	Film 0.068μF ±5%
C624	1	1	1	DF15683350	Film 0.068μF ±5%
C625	1	1	1	DF15333350	Film 0.033μF ±5%
C626	1	1	1	DF15333350	Film 0.033μF ±5%
C627	1	1	1	DF15104350	Film 0.1μF ±5%
C628	1	1	1	DF15104350	Film 0.1μF ±5%
C629	1	1	1	DF15154350	Film 0.15μF ±5%
C630	1	1	1	DF15154350	Film 0.15μF ±5%
C631	1	1	1	EA10602530	Elect 10μF 25V
C632	1	1	1	EA10602530	Elect 10μF 25V
C633	1	1	1	DF15224350	Film 0.22μF ±5%
C634	1	1	1	DF15224350	Film 0.22μF ±5%
C635	1	1	1	DF15472300	Film 4700pF ±5%
C636	1	1	1	DF15472300	Film 4700pF ±5%
C637	1	1	1	EA10602530	Elect 10μF 25V
C638	1	1	1	EA10602530	Elect 10μF 25V
C639	1	1	1	DF15333350	Film 0.033μF ±5%
C640	1	1	1	DF15333350	Film 0.033μF ±5%
C641	1	1	1	DF15104350	Film 0.1μF ±5%
C642	1	1	1	DF15104350	Film 0.1μF ±5%
C643	1	1	1	EA47701630	Elect 470μF 16V
C644	1	1	1	EA47701630	Elect 470μF 16V
C645	1	1	1	EA47602530	Elect 47μF 25V
C646	1	1	1	EA47602530	Elect 47μF 25V
C651	1	1	1	EA10602530	Elect 10μF 25V

REF. DESIG.	Q'TY U	Q'TY N	Q'TY A	PART NO.	DESCRIPTION
					P601-RESISTORS (All Resistors are ±5% and ¼W)
R601	1	1	1	GD05242140	2.4KΩ
R602	1	1	1	GD05242140	2.4KΩ
R603	1	1	1	GD05562140	5.6KΩ
R604	1	1	1	GD05562140	5.6KΩ
R605	1	1	1	GD05123140	12KΩ
R606	1	1	1	GD05123140	12KΩ
R609	1	1	1	GD05472140	4.7KΩ
R610	1	1	1	GD05472140	4.7KΩ
R613	1	1	1	GD05102140	1KΩ
R614	1	1	1	GD05102140	1KΩ
R615	1	1	1	GD05683140	68KΩ
R616	1	1	1	GD05683140	68KΩ
R617	1	1	1	GD05222140	2.2KΩ
R618	1	1	1	GD05222140	2.2KΩ
R619	1	1	1	GD05512140	5.1KΩ
R620	1	1	1	GD05512140	5.1KΩ
R623	1	1	1	GD05473140	47KΩ
R624	1	1	1	GD05473240	47KΩ
R625	1	1	1	GD05472140	4.7KΩ
R626	1	1	1	GD05472140	4.7KΩ
R627	1	1	1	GD05334140	330KΩ
R628	1	1	1	GD05334140	330KΩ
R629	1	1	1	GD05123140	12KΩ
R630	1	1	1	GD05123140	12KΩ
R631	1	1	1	GD05823140	82KΩ
R632	1	1	1	GD05823140	82KΩ
R633	1	1	1	GD05394140	390KΩ
R634	1	1	1	GD05394140	390KΩ
R635	1	1	1	GD05154140	150KΩ
R636	1	1	1	GD05154140	150KΩ
R637	1	1	1	GD05154140	150KΩ
R638	1	1	1	GD05154140	150KΩ
R641	1	1	1	GD05334140	330KΩ
R642	1	1	1	GD05334140	330KΩ
R643	1	1	1	GD05394140	390KΩ
R644	1	1	1	GD05394140	390KΩ
R651	1	1	1	GD05223140	22KΩ
R652	1	1	1	GD05332140	3.3KΩ
R653	1	1	1	GD05823140	82KΩ
R654	1	1	1	GD05223140	22KΩ
R655	1	1	1	GD05183140	18KΩ
R656	1	1	1	GD05392140	3.9KΩ

- (U): for U.S.A.
- (N): for Europe
- (A): for Australia
- (E): for Europe

REF. DESIG.	Q'TY U	N	A	PART NO.	DESCRIPTION
					P601-SEMICONDUCTORS
D651	1	1	1	HD20001000	Diode 1S1555
Q601	1	1	1	HC10012270	IC NE652
Q602	1	1	1	HC10012270	IC NE652
Q603	1	1	1	HC10013270	IC NE654
Q604	1	1	1	HC10013270	IC NE654
Q651	1	1	1	HT326342A0	Transistor 2SC2634 (R or S)
Q652	1	1	1	HT326342A0	Transistor 2SC2634 (R or S)
Q653	1	1	1	HT326342A0	Transistor 2SC2634 (R or S)
					P601-MISCELLANEOUS
J601	1	1	1	YJ06002430	Jack, (3P)
J602	1	1	1	YJ06002450	Jack, (6P)
J603	1	1	1	YJ06002460	Jack, (7P)
L601	1	1	1	LS10440050	M.P.X. Coil
L602	1	1	1	LS10440050	M.P.X. Coil
L603	1	1	1	LC23660600	Choke Coil, 36 mH
L604	1	1	1	LC23660600	Choke Coil, 36 mH
W601	1	1	1	YU03220260	Jumper Lead, (3P)
W602	1	1	1	YU06160260	Jumper Lead, (6P)
W603	1	1	1	YJ07160260	Jumper Lead, (7P)
					(SD320, SD220)
					P801-POWER SWITCH CIRCUIT BOARD
P801	1	1	1	YK129T1760	P.W. Board, Power Switch
	1			ZZ129T1760	P.W. Board Assembly
		1	1	ZZ129T8760	P.W. Board Assembly
⚠SO01	1			SP01010520	Push Switch
⚠SO01		1	1	SP01010510	Push Switch
					(SD320, SD220)
					P802-POWER TRANSFORMER CIRCUIT BOARD
P802	1	1	1	YK129T1770	P.W. Board, Transformer
	1			ZZ129T1770	P.W. Board Assembly
		1	1	ZZ129T8770	P.W. Board Assembly
⚠GO01	1			DK18103530	Ceramic Cap. 0.01μF 125V
⚠GO01		1	1	DK18103840	Ceramic Cap. 0.01μF 400V
J801	1			YL01010040	Terminal
J802	1			YL01010040	Terminal
⚠LO01	1			TS14820010	Power Transformer (SD320, only)
⚠LO01		1	1	TS14820050	Power Transformer (SD320, only)
⚠LO01	1			TS14133060	Power Transformer (SD220, only)
⚠LO01		1	1	TS14133050	Power Transformer (SD220, only)

REF. DESIG.	Q'TY U	N	A	PART NO.	DESCRIPTION
					(SD320, ONLY)
					PJ01-MAIN CIRCUIT BOARD
PJ01	1	1	1	YK129T1710	P.W. Board, Main
	1	1	1	ZZ133T1710	P.W. Board Assembly
					PJ01-CAPACITORS
CJ01	1	1	1	EA10601630	Elect 10μF 16V
CJ02	1	1	1	EA10601630	Elect 10μF 16V
CJ03	1	1	1	DD15820370	Ceramic 82p F ±5%
CJ04	1	1	1	DD15820370	Ceramic 82p F ±5%
CJ05	1	1	1	EA47503530	Elect 4.7μF 35V
CJ06	1	1	1	EA47503530	Elect 4.7μF 35V
CJ09	1	1	1	DF15681550	Film 680p F ±5%
CJ10	1	1	1	DF15681550	Film 680p F ±5%
CJ11	1	1	1	EA22505030	Elect 2.2μF 50V
CJ12	1	1	1	EA22505030	Elect 2.2μF 50V
CJ13	1	1	1	EA10701030	Elect 100μF 10V
CJ14	1	1	1	EA10701030	Elect 100μF 10V
CJ15	1	1	1	DF15183350	Film 0.018μF ±5%
CJ16	1	1	1	DF15183350	Film 0.018μF ±5%
CJ17	1	1	1	EA47503530	Elect 4.7μF 35V
CJ18	1	1	1	EA47503530	Elect 4.7μF 35V
CJ19	1	1	1	DF15183350	Film 0.018μF ±5%
CJ20	1	1	1	DF15183350	Film 0.018μF ±5%
CJ23	1	1	1	EA33505030	Elect 3.3μF 50V
CJ24	1	1	1	EA33505030	Elect 3.3μF 50V
CJ31	1	1	1	EA47405030	Elect 0.47μF 50V
CJ32	1	1	1	EA47405030	Elect 0.47μF 50V
CJ33	1	1	1	EA47601030	Elect 47μF 10V
CJ34	1	1	1	EA47601030	Elect 47μF 10V
CJ35	1	1	1	EA22505030	Elect 2.2μF 50V
CJ36	1	1	1	EA22505030	Elect 2.2μF 50V
CJ37	1	1	1	DF15223350	Elect 0.022μF ±5%
CJ38	1	1	1	DF15223350	Elect 0.022μF ±5%
CK03	1	1	1	EA47503530	Elect 4.7μF 35V
CK04	1	1	1	EA47503530	Elect 4.7μF 35V
CK05	1	1	1	DF15154350	Film 0.15μF ±5%
CK06	1	1	1	DF15154350	Film 0.15μF ±5%
CK07	1	1	1	EA10601630	Elect 10μF 16V
CK08	1	1	1	EA10601630	Elect 10μF 16V
CK09	1	1	1	DF15332300	Film 3300p F ±5%
CK10	1	1	1	DF15332300	Film 3300p F ±5%
CK11	1	1	1	EA10601630	Elect 10μF 16V
CK12	1	1	1	EA10601630	Elect 10μF 16V
CK13	1	1	1	DF15222300	Film 2200p F ±5%
CK14	1	1	1	DF15222300	Film 2200p F ±5%
CK15	1	1	1	DF15223350	Film 0.022μF ±5%
CK16	1	1	1	DF15223350	Film 0.022μF ±5%
CK17	1	1	1	DF15822300	Film 8200p F ±5%
CK18	1	1	1	DF15822300	Film 8200p F ±5%
CK19	1	1	1	DF15562300	Film 5600p F ±5%
CK20	1	1	1	DF15562300	Film 5600p F ±5%
CK21	1	1	1	DF15123350	Film 0.012μF ±5%
CK22	1	1	1	DF15123350	Film 0.012μF ±5%
CK23	1	1	1	DF15682300	Film 6800p F ±5%
CK24	1	1	1	DF15682300	Film 6800p F ±5%

- (U): for U.S.A.
- (N): for Europe
- (A): for Australia
- (E): for Europe

REF. DESIG.	Q'TY U	N	A	PART NO.	DESCRIPTION
CK25	1	1	1	EA22701030	Elect 220μ F 10V
CK27	1	1	1	DD15101370	Ceramic 100p F ±5%
CK28	1	1	1	DD15101370	Ceramic 100p F ±5%
CK29	1	1	1	DF15272300	Film 2700p F ±5%
CK30	1	1	1	DF15272300	Film 2700p F ±5%
CK31	1	1	1	DF15272300	Film 2700p F ±5%
CK32	1	1	1	DF15272300	Film 2700pF ±5%
CK33	1	1	1	DF15272300	Film 2700p F ±5%
CK34	1	1	1	DF15272300	Film 2700p F ±5%
CK35	1	1	1	DF15562300	Film 5600p F ±5%
CK36	1	1	1	DF15562300	Film 5600p F ±5%
CK41	1	1	1	EA33505030	Elect 3.3μ F 50V
CK42	1	1	1	EA22601630	Elect 22μ F 16V
CK43	1	1	1	EA10601630	Elect 10μ F 16V
CK44	1	1	1	EA22601630	Elect 23μ F 16V
CK45	1	1	1	EA47701630	Elect 470μ F 16V
CK46	1	1	1	EA33505030	Elect 3.3μ F 16V
CK47	1	1	1	EA47701630	Elect 470μ F 16V
CK48	1	1	1	EA47405030	Elect 0.47μ F 50V
CK61	1	1	1	EA22505030	Elect 2.2μ F 50V
CK62	1	1	1	EA22505030	Elect 3.3μ F 50V
CK63	1	1	1	EA22505130	Elect 2.2μ F 50V
CK71	1	1	1	EA47701630	Elect 470μ F 16V
CK72	1	1	1	EA10601630	Elect 10μ F 16V
CK73	1	1	1	EA33505030	Elect 3.3μ F 50V
CK81	1	1	1	EA10701030	Elect 100μ F 10V
CK82	1	1	1	EA22701630	Elect 220μ F 16V
CK84	1	1	1	EA22701630	Elect 220μ F 16V
CK91	1	1	1	DK18103300	Ceramic 0.01μ F
CK93	1	1	1	DK18103300	Ceramic 0.01μ F
CK94	1	1	1	DK18103300	Ceramic 0.01μ F
CK95	1	1	1	DK18103300	Ceramic 0.01μ F
CL01	1	1	1	DF15222550	Film 2200p F ±5%
CL02	1	1	1	DF15332300	Film 3300p F ±5%
CL03	1	1	1	EA47601630	Elect 47μ F 16V
CL04	1	1	1	EA47601630	Elect 47μ F 16V
CL05	1	1	1	DD15221370	Ceramic 220p F ±5%
CL06	1	1	1	DD15221370	Ceramic 220p F ±5%
C801	1	1	1	DK18473320	Ceramic 0.047μ F
⚠C802	1	1	1	EA10803530	Elect 1000μ F 35V
⚠C803	1	1	1	EA10803530	Elect 1000μ F 35V
⚠C804	1	1	1	EA47701630	Elect 470μ F 16V
C805	1	1	1	EA47701630	Elect 470μ F 16V
⚠C806	1	1	1	EA47701630	Elect 470μ F 16V
C807	1	1	1	EA47701630	Elect 470μ F 16V
C808	1	1	1	DK18473320	Ceramic 0.047μ F
					PJ01-RESISTORS
					(All Resistors are ±5% and ¼W)
RJ01	1	1	1	GD05473140	47KΩ
RJ02	1	1	1	GD05473140	47KΩ
RJ03	1	1	1	GD05472140	4.7KΩ
RJ04	1	1	1	GD05472140	4.7KΩ
RJ07	1	1	1	GD05332140	3.3KΩ
RJ08	1	1	1	GD05332140	3.3KΩ
RJ09	1	1	1	GD05473140	47KΩ
RJ10	1	1	1	GD05473140	47KΩ

REF. DESIG.	Q'TY U	N	A	PART NO.	DESCRIPTION
RJ13	1	1	1	GD05333140	33KΩ
RJ14	1	1	1	GD05333140	33KΩ
RJ15	1	1	1	GD05100140	10Ω
RJ16	1	1	1	GD05100140	10Ω
RJ17	1	1	1	GD05104140	100KΩ
RJ18	1	1	1	GD05104140	100KΩ
RJ19	1	1	1	GD05473140	47KΩ
RJ20	1	1	1	GD05473140	47KΩ
RJ21	1	1	1	GD05820140	82Ω
RJ22	1	1	1	GD05820140	82Ω
RJ23	1	1	1	GD05822140	8.2KΩ
RJ24	1	1	1	GD05822140	8.2KΩ
RJ25	1	1	1	GD05184140	180KΩ
RJ26	1	1	1	GD05184140	180KΩ
RJ27	1	1	1	GD05332140	3.3KΩ
RJ28	1	1	1	GD05332140	3.3KΩ
RJ29	1	1	1	GD05332140	3.3KΩ
RJ30	1	1	1	GD05332140	3.3KΩ
RJ31	1	1	1	GD05274140	270KΩ
RJ32	1	1	1	GD05274140	270KΩ
RJ33	1	1	1	RA05030800	50KΩ, Trimming
RJ34	1	1	1	RA05030800	50KΩ, Trimming
RJ35	1	1	1	GD05153140	15KΩ
RJ36	1	1	1	GD05153140	15KΩ
RJ41	1	1	1	GD05562140	5.6KΩ
RJ42	1	1	1	GD05562140	5.6KΩ
RJ45	1	1	1	GD05274140	270KΩ
RJ46	1	1	1	GD05274140	270KΩ
RJ49	1	1	1	GD05682140	6.8KΩ
RJ50	1	1	1	GD05682140	6.8KΩ
RJ51	1	1	1	GD05102140	1KΩ
RJ52	1	1	1	GD05102140	1KΩ
RJ53	1	1	1	GA05331010	330Ω 1W
RJ54	1	1	1	GA05331010	330Ω 1W
RJ55	1	1	1	GD05101140	100Ω
RJ56	1	1	1	GD05101140	100Ω
RJ57	1	1	1	GD05471140	470Ω
RJ58	1	1	1	GD05471140	470Ω
RJ59	1	1	1	GD05333140	33KΩ
RJ60	1	1	1	GD05333140	33KΩ
RJ61	1	1	1	GD05332140	3.3KΩ
RJ62	1	1	1	GD05332140	3.3KΩ
RJ67	1	1	1	GD05105140	1MΩ
RJ68	1	1	1	GD05105140	1MΩ
RK01	1	1	1	RA05030800	50KΩ, Trimming
RK02	1	1	1	RA05030800	50KΩ, Trimming
RK03	1	1	1	GD05222140	2.2KΩ
RK04	1	1	1	GD05222140	2.2KΩ
RK05	1	1	1	GD05474140	470KΩ
RK06	1	1	1	GD05474140	470KΩ
RK07	1	1	1	GD05103140	10KΩ
RK08	1	1	1	GD05103140	10KΩ
RK09	1	1	1	GD05154140	150KΩ
RK10	1	1	1	GD05154140	150KΩ

- (U): for U.S.A.
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REF. DESIG.	Q'TY U	Q'TY N	Q'TY A	PART NO.	DESCRIPTION
RK11	1	1	1	GD05472140	4.7KΩ
RK12	1	1	1	GD05472140	4.7KΩ
RK13	1	1	1	GD05822140	8.2KΩ
RK14	1	1	1	GD05822140	8.2KΩ
RK15	1	1	1	GD05152140	1.5KΩ
RK16	1	1	1	GD05152140	1.5KΩ
RK17	1	1	1	GD05104140	100KΩ
RK18	1	1	1	GD05104140	100KΩ
RK19	1	1	1	GD05560140	56Ω
RK20	1	1	1	GD05560140	56Ω
RK21	1	1	1	GD05472140	4.7KΩ
RK22	1	1	1	GD05472140	4.7KΩ
RK23	1	1	1	GD05101140	100Ω
RK24	1	1	1	GD05101140	100Ω
RK25	1	1	1	GD05272140	2.7KΩ
RK26	1	1	1	GD05272140	2.7KΩ
RK27	1	1	1	GD05101140	100Ω
RK28	1	1	1	GD05101140	100Ω
RK29	1	1	1	GD05682140	6.8KΩ
RK30	1	1	1	GD05682140	6.8KΩ
RK31	1	1	1	GD05682140	6.8KΩ
RK32	1	1	1	GD05682140	6.8KΩ
RK33	1	1	1	GD05221140	220Ω
RK34	1	1	1	GD05221140	220Ω
RK35	1	1	1	GD05152140	1.5KΩ
RK37	1	1	1	GD05822140	8.2KΩ
RK38	1	1	1	GD05822140	8.2KΩ
RK40	1	1	1	GD05223140	22KΩ
RK41	1	1	1	GD05332140	3.3KΩ
RK42	1	1	1	GD05474140	470KΩ
RK43	1	1	1	GD05473140	47KΩ
RK45	1	1	1	GD05393140	39KΩ
RK46	1	1	1	GD05473140	47KΩ
RK47	1	1	1	GD05104140	100KΩ
RK48	1	1	1	GD05103140	10KΩ
RK49	1	1	1	GD05472140	4.7KΩ
RK50	1	1	1	GD05472140	4.7KΩ
RK51	1	1	1	GD05223140	22KΩ
RK52	1	1	1	GD05223140	22KΩ
RK53	1	1	1	GD05474140	470KΩ
RK54	1	1	1	GD05474140	470KΩ
RK56	1	1	1	GD05104140	100KΩ
RK57	1	1	1	GD05472140	4.7KΩ
RK58	1	1	1	GD05124140	120KΩ
RK59	1	1	1	GD05473140	47KΩ
RK61	1	1	1	GD05105140	1MΩ
RK63	1	1	1	GD05124140	120KΩ
RK64	1	1	1	GD05103140	10KΩ
RK65	1	1	1	GD05393140	39KΩ
RK66	1	1	1	GD05103140	10KΩ
RK67	1	1	1	GD05273140	27KΩ
RK68	1	1	1	GD05273140	27KΩ
RK73	1	1	1	GD05822140	8.2KΩ
RK74	1	1	1	GD05681140	680Ω
RK75	1	1	1	GD05473140	47KΩ
RK76	1	1	1	GD05104140	100KΩ
RK77	1	1	1	GD05122140	1.2KΩ
RK78	1	1	1	GD05122140	1.2KΩ
RK80	1	1	1	GD05124140	120KΩ
RK81	1	1	1	GD05103140	10KΩ
RK82	1	1	1	GD05103140	10KΩ
RK85	1	1	1	GD05123140	12KΩ
⚠RK86	1	1	1	GG05471140	470Ω
⚠RK87	1	1	1	GG05471140	470Ω
RK88	1	1	1	GD05104140	100KΩ
RK89	1	1	1	GD05273140	27KΩ
RK90	1	1	1	GD05105140	1MΩ
RK91	1	1	1	GD05184140	180KΩ
RK93	1	1	1	GD05560140	56Ω
RK94	1	1	1	GD05560140	56Ω
RK95	1	1	1	GD05101140	100Ω
RK96	1	1	1	GD05101140	100Ω
RK97	1	1	1	GD05472140	4.7KΩ
RL01	1	1	1	GD05123140	12KΩ
RL02	1	1	1	GD05681140	680Ω
RL03	1	1	1	GD05022140	2.2Ω
RL04	1	1	1	GD05102140	1KΩ
RL05	1	1	1	GD05561140	560Ω
RL06	1	1	1	GD05274140	270KΩ
RL07	1	1	1	GD05561140	560Ω
RL11	1	1	1	RA05030800	50KΩ, Trimming
RL12	1	1	1	RA05030800	50KΩ, Trimming
⚠R801	1	1	1	GA05010010	1Ω 1W
R802	1	1	1	GD05101140	100Ω
⚠R803	1	1	1	GG05271120	270Ω ½W
R804	1	1	1	GD05101140	100Ω
⚠R805	1	1	1	GA05100010	10Ω 1W
					PJ01-SEMICONDUCTORS
⚠DK41	1	1	1	HD20015030	Diode DS135D
DK42	1	1	1	HD20001000	Diode 1S1555
DK43	1	1	1	HD20001000	Diode 1S1555
DK44	1	1	1	HD20001000	Diode 1S1555
DK45	1	1	1	HD20001000	Diode 1S1555
DK46	1	1	1	HD20001000	Diode 1S1555
DK47	1	1	1	HD30052090	Zener WZ-056
DK48	1	1	1	HD20001000	Diode 1S1555
DK49	1	1	1	HD30052090	Zener WZ-056
DK50	1	1	1	HD20001000	Diode 1S1555
DK52	1	1	1	HD20001000	Diode 1S1555
DK53	1	1	1	HD20001000	Diode 1S1555
DK61	1	1	1	HD20001000	Diode 1S1555
DK62	1	1	1	HD20001000	Diode 1S1555
DK63	1	1	1	HD20001000	Diode 1S1555
DK64	1	1	1	HD20001000	Diode 1S1555
DK65	1	1	1	HD20001000	Diode 1S1555
DK71	1	1	1	HD20001000	Diode 1S1555
DK83	1	1	1	HD20001000	Diode 1S1555
DK84	1	1	1	HD20001000	Diode 1S1555
DK91	1	1	1	HD20001000	Diode 1S1555
DK92	1	1	1	HD20001000	Diode 1S1555
⚠D801	1	1	1	HD20015030	Diode DS135D
⚠D802	1	1	1	HD20015030	Diode DS135D
⚠D803	1	1	1	HD20015030	Diode DS135D
⚠D804	1	1	1	HD20015030	Diode DS135D
D805	1	1	1	HD30087090	Zener BZ-130

- (U): for U.S.A.
- (N): for Europe
- (A): for Australia
- (E): for Europe

REF. DESIG.	Q'TY U	N	A	PART NO.	DESCRIPTION	
Q001	1	1	1	HC10017090	IC	NJM2043DD
Q002	1	1	1	HC406905B0	IC	TC4069UBP
QJ01	1	1	1	HT318451U0	Transistor	2SC1845 (U)
QJ02	1	1	1	HT318451U0	Transistor	2SC1845 (U)
QJ03	1	1	1	HT308282B0	Transistor	2SC828 (S or T)
QJ04	1	1	1	HT308282B0	Transistor	2SC828 (S or T)
QJ05	1	1	1	HT308282B0	Transistor	2SC828 (S or T)
QJ06	1	1	1	HT308282B0	Transistor	2SC828 (S or T)
QJ07	1	1	1	HT308282B0	Transistor	2SC828 (S or T)
QJ08	1	1	1	HT308282B0	Transistor	2SC828 (S or T)
QK01	1	1	1	HT308382B0	Transistor	2SC828 (S or T)
QK02	1	1	1	HT308282B0	Transistor	2SC828 (S or T)
QK03	1	1	1	HT326342B0	Transistor	2SC2634 (S or T)
QK04	1	1	1	HT326342B0	Transistor	2SC2634 (S or T)
QK41	1	1	1	HT107332A0	Transistor	2SA733 (P or Q)
QK42	1	1	1	HT308282B0	Transistor	2SC828 (S or T)
QK43	1	1	1	HT107332A0	Transistor	2SA733 (P or Q)
QK51	1	1	1	HT326342B0	Transistor	2SC2634 (S or T)
QK52	1	1	1	HT326342B0	Transistor	2SC2634 (S or T)
QK61	1	1	1	HT107332A0	Transistor	2SA733 (P or Q)
QK62	1	1	1	HT326342B0	Transistor	2SC2634 (S or T)
QK71	1	1	1	HT326342B0	Transistor	2SC2634 (S or T)
QK72	1	1	1	HT326342B0	Transistor	2SC2634 (S or T)
QK73	1	1	1	HT107332A0	Transistor	2SA733 (P or Q)
QK74	1	1	1	HT107332A0	Transistor	2SA733 (P or Q)
QK81	1	1	1	HT326342B0	Transistor	2SC2634 (S or T)
QK82	1	1	1	HT326342B0	Transistor	2SC2634 (S or T)
QL01	1	1	1	HT313832B0	Transistor	2SC1383 (Q or R)
QL02	1	1	1	HT326342B0	Transistor	2SC2634 (S or T)
⚠Q801	1	1	1	HT403131E0	Transistor	2SD313 (E)
⚠Q802	1	1	1	HT403131E0	Transistor	2SD313 (E)
					PJ01-MISCELLANEOUS	
J041	1			YT02040480	Terminal, RCA Pin (4P)	
J041		1	1	YT02040470	Terminal, RCA Pin (4P)	
JJ01	1	1	1	YJ01001780	Jack, Mic (L)	
JJ02	1	1	1	YJ01001780	Jack, Mic (R)	
LK01	1	1	1	LC21060510	Choke Coil, 10mH	
LK02	1	1	1	LC21060510	Choke Coil, 10mH	
LK03	1	1	1	LC22260510	Choke Coil, 22mH	
LK04	1	1	1	LC22260510	Choke Coil, 22mH	
PJ11	1	1	1	YU03120260	Jumper Lead, (3P)	
PJ13	1	1	1	YU03340260	Jumper Lead, (3P)	
PJ71	1	1	1	YP06002420	Plug, (6P)	
PJ72	1	1	1	YP06002360	Plug, (3P)	
PJ73	1	1	1	YP06001060	Plug, (7P)	
PJ74	1	1	1	YJ06002440	Jack	
PK11	1	1	1	YU02180260	Jumper Lead, (2P)	
S101	1	1	1	SP04010380	Push Switch, Mic/Line	
S102	1	1	1	SP02050070	Push Switch, Tape/Dolby/B-C	

REF. DESIG.	Q'TY U	N	A	PART NO.	DESCRIPTION		
					(SD220, ONLY)		
					PJ01-MAIN CIRCUIT BOARD		
PJ01	1	1	1	YK129T1710	P.W. Board, Main		
	1	1	1	ZZ129T1710	P.W. Board Assembly		
					PJ01-CAPACITORS		
CJ01	1	1	1	EA10601630	Elect	10μF	16V
CJ02	1	1	1	EA10601630	Elect	10μF	16V
CJ03	1	1	1	DD15820370	Ceramic	82pF ±5%	
CJ04	1	1	1	DD15820370	Ceramic	82pF ±5%	
CJ05	1	1	1	EA47503530	Elect	4.7μF	35V
CJ06	1	1	1	EA47503530	Elect	4.7μF	35V
CJ07	1	1	1	EA47503530	Elect	4.7μF	35V
CJ08	1	1	1	EA47503530	Elect	4.7μF	35V
CJ09	1	1	1	DF15681550	Film	680pF ±5%	
CJ10	1	1	1	DF15681550	Film	680pF ±5%	
CJ11	1	1	1	EA22505030	Elect	2.2μF	50V
CJ12	1	1	1	EA22505030	Elect	2.2μF	50V
CJ13	1	1	1	EA10701030	Elect	100μF	10V
CJ14	1	1	1	EA10701030	Elect	100μF	10V
CJ15	1	1	1	DF15183350	Film	0.018μF ±5%	
CJ16	1	1	1	DF15183350	Film	0.018μF ±5%	
CJ17	1	1	1	EA47503530	Elect	4.7μF	35V
CJ18	1	1	1	EA47503530	Elect	4.7μF	35V
CJ19	1	1	1	DF15183350	Film	0.018μF ±5%	
CJ20	1	1	1	DF15183350	Film	0.018μF ±5%	
CJ21	1	1	1	EA47503530	Elect	4.7μF	35V
CJ22	1	1	1	EA47503530	Elect	4.7μF	35V
CJ23	1	1	1	EA33505030	Elect	3.3μF	50V
CJ24	1	1	1	EA33505030	Elect	3.3μF	50V
CJ31	1	1	1	EA47405030	Elect	0.47μF	50V
CJ32	1	1	1	EA47405030	Elect	0.47μF	50V
CJ33	1	1	1	EA47601030	Elect	47μF	10V
CJ34	1	1	1	EA47601030	Elect	47μF	50V
CJ35	1	1	1	EA22505030	Elect	2.2μF	50V
CJ36	1	1	1	EA22505030	Elect	2.2μF	50V
CK01	1	1	1	EA10601631	Elect	10μF	16V
CK02	1	1	1	EA10601631	Elect	10μF	16V
CK03	1	1	1	EA47503530	Elect	4.7μF	35V
CK04	1	1	1	EA47503530	Elect	4.7μF	35V
CK05	1	1	1	DF15154350	Film	0.15μF ±5%	
CK06	1	1	1	DF15154350	Film	0.15μF ±5%	
CK07	1	1	1	EA10601630	Elect	10μF	16V
CK08	1	1	1	EA10601630	Elect	10μF	16V
CK09	1	1	1	DF15332300	Film	3300pF ±5%	
CK10	1	1	1	DF15332300	Film	3300pF ±5%	
CK11	1	1	1	EA10601630	Elect	10μF	16V
CK12	1	1	1	EA10601630	Elect	10μF	16V
CK13	1	1	1	DF15222300	Film	2200pF ±5%	
CK14	1	1	1	DF15222300	Film	2200pF ±5%	
CK15	1	1	1	DF15223350	Film	0.022μF ±5%	
CK16	1	1	1	DF15223350	Film	0.022μF ±5%	
CK17	1	1	1	DF15822300	Film	8200pF ±5%	
CK18	1	1	1	DF15822300	Film	8200pF ±5%	
CK19	1	1	1	DF15562350	Film	5600pF ±5%	
CK20	1	1	1	DF15562350	Film	5600pF ±5%	
CK21	1	1	1	DF15123350	Film	0.012μF ±5%	
CK22	1	1	1	DF15123350	Film	0.012μF ±5%	
CK23	1	1	1	DF15682300	Film	6800pF ±5%	
CK24	1	1	1	DF15682300	Film	6800pF ±5%	

- (U): for U.S.A.
- (N): for Europe
- (A): for Australia
- (E): for Europe

REF. DESIG.	Q'TY U	N	A	PART NO.	DESCRIPTION
CK25	1	1	1	EA22701030	Elect 220μF 10V
CK27	1	1	1	DD15101370	Ceramic 100pF ±5%
CK28	1	1	1	DD15101370	Ceramic 100pF ±5%
CK29	1	1	1	DF15272300	Film 2700pF ±5%
CK30	1	1	1	DF15272300	Film 2700pF ±5%
CK31	1	1	1	DF15272300	Film 2700pF ±5%
CK32	1	1	1	DF15272300	Film 2700pF ±5%
CK33	1	1	1	DF15272300	Film 2700pF ±5%
CK34	1	1	1	DF15272300	Film 2700pF ±5%
CK35	1	1	1	DF15562300	Film 5600pF ±5%
CK36	1	1	1	DF15562300	Film 5600pF ±5%
CK41	1	1	1	EA33505030	Elect 3.3μF 50V
CK42	1	1	1	EA22601630	Elect 22μF 16V
CK43	1	1	1	EA10601630	Elect 10μF 16V
CK44	1	1	1	EA22601630	Elect 22μF 16V
CK45	1	1	1	EA47701630	Elect 470μF 16V
CK46	1	1	1	EA33505030	Elect 3.3μF 50V
CK47	1	1	1	EA47701630	Elect 470μF 16V
CK48	1	1	1	EA47405030	Elect 0.47μF 50V
CK61	1	1	1	EA22505030	Elect 2.2μF 50V
CK62	1	1	1	EA33505030	Elect 3.3μF 50V
CK63	1	1	1	EA22505030	Elect 2.2μF 50V
CK71	1	1	1	EA47701630	Elect 470μF 16V
CK72	1	1	1	EA10601630	Elect 10μF 16V
CK73	1	1	1	EA33505030	Elect 3.3μF 50V
CK81	1	1	1	EA10701030	Elect 100μF 10V
CK82	1	1	1	EA22701630	Elect 220μF 16V
CK84	1	1	1	EA10801630	Elect 1000μF 16V
CK85	1	1	1	EA47701630	Elect 470μF 16V
CK91	1	1	1	DK18103300	Ceramic 0.01μF
CK93	1	1	1	DK18103300	Ceramic 0.01μF
CK94	1	1	1	DK18103300	Ceramic 0.01μF
CK95	1	1	1	DK18103300	Ceramic 0.01μF
CL01	1	1	1	DF15222550	Film 2200pF ±5%
CL02	1	1	1	DF15682300	Film 6800pF ±5%
CL03	1	1	1	EA47601630	Elect 47μF 16V
CL04	1	1	1	EA47601630	Elect 47μF 16V
CL05	1	1	1	DD15221370	Ceramic 220pF ±5%
CL06	1	1	1	DD15221370	Ceramic 220pF ±5%
CL07	1	1	1	DF15472300	Film 4700pF ±5%
C601	1	1	1	EA47405030	Elect 0.47μF 50V
C602	1	1	1	EA47405030	Elect 0.47μF 50V
C603	1	1	1	EA10601630	Elect 10μF 16V
C604	1	1	1	EA10601630	Elect 10μF 16V
C605	1	1	1	DF15473350	Film 0.047μF ±5%
C606	1	1	1	DF15473350	Film 0.047μF ±5%
C607	1	1	1	EA33405030	Elect 0.33μF 50V
C608	1	1	1	EA33405030	Elect 0.33μF 50V
C609	1	1	1	EA10405030	Elect 0.1μF 50V
C610	1	1	1	EA10405030	Elect 0.1μF 50V
C611	1	1	1	EA22701030	Elect 220μF 10V
C612	1	1	1	EA22701030	Elect 220μF 10V
C613	1	1	1	DF15472300	Film 0.0047μF ±5%
C614	1	1	1	DF15472300	Film 0.0047μF ±5%
C615	1	1	1	DF15562300	Film 0.0056μF ±5%
C616	1	1	1	DF15562300	Film 0.0056μF ±5%
C617	1	1	1	DF15273350	Film 0.027μF ±5%
C618	1	1	1	DF15273350	Film 0.027μF ±5%
C619	1	1	1	EA47405030	Elect 0.47μF 50V
C620	1	1	1	EA47405030	Elect 0.47μF 50V

REF. DESIG.	Q'TY U	N	A	PART NO.	DESCRIPTION
C621	1	1	1	EA10601630	Elect 10μF 16V
C622	1	1	1	EA10601630	Elect 10μF 16V
C623	1	1	1	DF15272300	Film 0.0027μF ±5%
C624	1	1	1	DF15272300	Film 0.0027μF ±5%
C625	1	1	1	EA10505030	Elect 10μF 16V
C801	1	1	1	DK18473320	Ceramic 0.047μF
⚠C802	1	1	1	EA10803530	Elect 1000μF 35V
⚠C803	1	1	1	EA10803530	Elect 1000μF 35V
⚠C804	1	1	1	EA47701630	Elect 470μF 16V
C805	1	1	1	EA47701630	Elect 470μF 16V
⚠C806	1	1	1	EA47701630	Elect 470μF 16V
C807	1	1	1	EA47701630	Elect 470μF 16V
C808	1	1	1	DK18473320	Ceramic 0.047μF
					PJ01-RESISTORS (All Resistors are ±5% and ¼W)
RJ01	1	1	1	GD05473140	47KΩ
RJ02	1	1	1	GD05473140	47KΩ
RJ03	1	1	1	GD05472140	4.7KΩ
RJ04	1	1	1	GD05472410	4.7KΩ
RJ07	1	1	1	GD05332140	3.3KΩ
RJ08	1	1	1	GD05332140	3.3KΩ
RJ09	1	1	1	GD05473140	47KΩ
RJ10	1	1	1	GD05473140	47KΩ
RJ13	1	1	1	GD05333140	33KΩ
RJ14	1	1	1	GD05333140	33KΩ
RJ15	1	1	1	GD05100140	10Ω
RJ16	1	1	1	GD05100140	10Ω
RJ17	1	1	1	GD05104140	100KΩ
RJ18	1	1	1	GD05104140	100KΩ
RJ19	1	1	1	GD05473140	47KΩ
RJ20	1	1	1	GD05473140	47KΩ
RJ21	1	1	1	GD05820140	82Ω
RJ22	1	1	1	GD05820140	82Ω
RJ23	1	1	1	GD05822140	8.2KΩ
RJ24	1	1	1	GD05822140	8.2KΩ
RJ25	1	1	1	GD05184140	180KΩ
RJ26	1	1	1	GD05184140	180KΩ
RJ27	1	1	1	GD05332140	3.3KΩ
RJ28	1	1	1	GD05332140	3.3KΩ
RJ29	1	1	1	GD05332140	3.3KΩ
RJ30	1	1	1	GD05332140	3.3KΩ
RJ31	1	1	1	GD05274140	270KΩ
RJ32	1	1	1	GD05274140	270KΩ
RJ33	1	1	1	RA05030800	50KΩ, Trimming
RJ34	1	1	1	RA05030800	50KΩ, Trimming
RJ35	1	1	1	GD05153140	15KΩ
RJ36	1	1	1	GD05153140	15KΩ
RJ37	1	1	1	GD05474140	470KΩ
RJ38	1	1	1	GD05474140	470KΩ
RJ41	1	1	1	GD05562140	5.6KΩ
RJ42	1	1	1	GD05562140	5.6KΩ
RJ45	1	1	1	GD05274140	270KΩ
RJ46	1	1	1	GD05274140	270KΩ
RJ49	1	1	1	GD05682140	6.8KΩ
RJ50	1	1	1	GD05682140	6.8KΩ

- (U): for U.S.A.
- (N): for Europe
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- (E): for Europe

REF. DESIG.	Q'TY U	N	A	PART NO.	DESCRIPTION
RJ51	1	1	1	GD05102140	1KΩ
RJ52	1	1	1	GD05102140	1KΩ
RJ53	1	1	1	GA05331010	330Ω 1W
RJ54	1	1	1	GA05331010	330Ω 1W
RJ55	1	1	1	GD05101140	100Ω
RJ56	1	1	1	GD05101140	100Ω
RJ57	1	1	1	GD05471140	470Ω
RJ58	1	1	1	GD05471140	470Ω
RJ59	1	1	1	GD05333140	33KΩ
RJ60	1	1	1	GD05333140	33KΩ
RJ61	1	1	1	GD05332140	3.3KΩ
RJ62	1	1	1	GD05332140	3.3KΩ
RJ63	1	1	1	GD05473140	47KΩ
RJ64	1	1	1	GD05473140	47KΩ
RJ67	1	1	1	GD05105140	1MΩ
RJ68	1	1	1	GD05105140	1MΩ
RK01	1	1	1	RA05030800	50KΩ, Trimming
RK02	1	1	1	RA05030800	50KΩ, Trimming
RK03	1	1	1	GD05222140	2.2KΩ
RK04	1	1	1	GD05222140	2.2KΩ
RK05	1	1	1	GD05474140	470KΩ
RK06	1	1	1	GD05474140	470KΩ
RK07	1	1	1	GD05103140	10KΩ
RK08	1	1	1	GD05103140	10KΩ
RK09	1	1	1	GD05154140	150KΩ
RK10	1	1	1	GD05154140	150KΩ
RK11	1	1	1	GD05472140	4.7KΩ
RK12	1	1	1	GD05472140	4.7KΩ
RK13	1	1	1	GD05822140	8.2KΩ
RK14	1	1	1	GD05822140	8.2KΩ
RK15	1	1	1	GD05152140	1.5Ω
RK16	1	1	1	GD05152140	1.5Ω
RK17	1	1	1	GD05104140	100KΩ
RK18	1	1	1	GD05104140	100KΩ
RK19	1	1	1	GD05560140	56Ω
RK20	1	1	1	GD05560140	56Ω
RK21	1	1	1	GD05472140	4.7KΩ
RK22	1	1	1	GD05472140	4.7KΩ
RK23	1	1	1	GD05101140	100Ω
RK24	1	1	1	GD05101140	100Ω
RK25	1	1	1	GD05272140	2.7KΩ
RK26	1	1	1	GD05272140	2.7KΩ
RK27	1	1	1	GD05101140	100Ω
RK28	1	1	1	GD05101140	100Ω
RK29	1	1	1	GD05682140	6.8KΩ
RK30	1	1	1	GD05682140	6.8KΩ
RK31	1	1	1	GD05682140	6.8KΩ
RK32	1	1	1	GD05682140	6.8KΩ
RK33	1	1	1	GD05221140	220Ω
RK34	1	1	1	GD05221140	220Ω
RK35	1	1	1	GD05152140	1.5KΩ
RK37	1	1	1	GD05822140	8.2KΩ
RK38	1	1	1	GD05822140	8.2KΩ
RK40	1	1	1	GD05223140	22KΩ
RK41	1	1	1	GD05332140	3.3KΩ
RK42	1	1	1	GD05474140	470KΩ
RK43	1	1	1	GD05473140	47KΩ
RK45	1	1	1	GD05393140	39KΩ
RK46	1	1	1	GD05473140	47KΩ

REF. DESIG.	Q'TY U	N	A	PART NO.	DESCRIPTION
RK47	1	1	1	GD05104140	100KΩ
RK48	1	1	1	GD05103140	10KΩ
RK49	1	1	1	GD05472140	4.7KΩ
RK50	1	1	1	GD05472140	4.7KΩ
RK51	1	1	1	GD05223140	22KΩ
RK52	1	1	1	GD05223140	22KΩ
RK53	1	1	1	GD05474140	470KΩ
RK54	1	1	1	GD05474140	470KΩ
RK56	1	1	1	GD05104140	100KΩ
RK57	1	1	1	GD05472140	4.7KΩ
RK58	1	1	1	GD05124140	120KΩ
RK59	1	1	1	GD05473140	47KΩ
RK61	1	1	1	GD05105140	1MΩ
RK63	1	1	1	GD05124140	120KΩ
RK64	1	1	1	GD05103140	10KΩ
RK65	1	1	1	GD05393140	39KΩ
RK66	1	1	1	GD05103140	10KΩ
RK67	1	1	1	GD05273140	27KΩ
RK68	1	1	1	GD05273140	27KΩ
RK71	1	1	1	GD05274140	270KΩ
RK72	1	1	1	GD05274140	270KΩ
RK73	1	1	1	GD05822140	8.2KΩ
RK74	1	1	1	GD05681140	680Ω
RK75	1	1	1	GD05473140	47KΩ
RK76	1	1	1	GD05104140	100KΩ
RK77	1	1	1	GD05122140	1.2KΩ
RK78	1	1	1	GD05122140	1.2KΩ
RK80	1	1	1	GD05124140	120KΩ
RK81	1	1	1	GD05103140	10KΩ
RK82	1	1	1	GD05103140	10KΩ
RK83	1	1	1	GD05274140	270KΩ
RK84	1	1	1	GD05274140	270KΩ
RK85	1	1	1	GD05123140	12KΩ
⚠ RK86	1	1	1	GG05471140	470Ω
⚠ RK87	1	1	1	GG05471140	470Ω
RK88	1	1	1	GD05104140	100KΩ
RK89	1	1	1	GD05273140	27KΩ
RK90	1	1	1	GD05105140	1MΩ
RK91	1	1	1	GD05184140	180KΩ
RK92	1	1	1	GH05470120	47Ω ½W
RK93	1	1	1	GD05560140	56Ω
RK94	1	1	1	GD05560140	56Ω
RK95	1	1	1	GD05101140	100Ω
RK96	1	1	1	GD05101140	100Ω
RK97	1	1	1	GD05472140	4.7KΩ
RL01	1	1	1	GD05822140	8.2KΩ
RL03	1	1	1	GD05033140	3.3Ω
RL04	1	1	1	GD05102140	1KΩ
RL05	1	1	1	GD05561140	560Ω
RL06	1	1	1	GD05274140	270KΩ
RL07	1	1	1	GD05821140	820Ω
RL11	1	1	1	RA05030800	50KΩ, Trimming
RL12	1	1	1	RA05030800	50KΩ, Trimming
RL13	1	1	1	GD05103140	10KΩ
RL14	1	1	1	GD05103140	10KΩ

- (U): for U.S.A.
- (N): for Europe
- (A): for Australia
- (E): for Europe

REF. DESIG.	Q'TY U	N	A	PART NO.	DESCRIPTION
R601	1	1	1	GD05274140	270KΩ
R602	1	1	1	GD05274140	270KΩ
R603	1	1	1	GD05154140	150KΩ
R604	1	1	1	GD05154140	150KΩ
R605	1	1	1	GD05104140	100KΩ
R606	1	1	1	GD05104140	100KΩ
R607	1	1	1	GD05473140	47KΩ
R608	1	1	1	GD05473140	47KΩ
R609	1	1	1	GD05332140	3.3KΩ
R610	1	1	1	GD05332140	3.3KΩ
R611	1	1	1	GD05181140	180Ω
R612	1	1	1	GD05181140	180Ω
R613	1	1	1	GD05473141	47KΩ
⚠R801	1	1	1	GA05010010	1Ω 1W
R802	1	1	1	GD05101140	100Ω
⚠R803	1	1	1	GH05271120	270Ω ½W
R804	1	1	1	GD05101140	100Ω
					PJ01-SEMICONDUCTORS
⚠DK41	1	1	1	HD20015030	Diode DS135D
DK42	1	1	1	HD20001000	Diode 1S1555
DK43	1	1	1	HD20001000	Diode 1S1555
DK44	1	1	1	HD20001000	Diode 1S1555
DK45	1	1	1	HD20001000	Diode 1S1555
DK46	1	1	1	HD20001000	Diode 1S1555
DK47	1	1	1	HD30052090	Zener WZ-056
DK48	1	1	1	HD20001000	Diode 1S1555
DK49	1	1	1	HD30052090	Zener WZ-056
DK50	1	1	1	HD20001000	Diode 1S1555
DK52	1	1	1	HD20001000	Diode 1S1555
DK53	1	1	1	HD20001000	Diode 1S1555
DK61	1	1	1	HD20001000	Diode 1S1555
DK62	1	1	1	HD20001000	Diode 1S1555
DK63	1	1	1	HD20001000	Diode 1S1555
DK64	1	1	1	HD20001000	Diode 1S1555
DK65	1	1	1	HD20001000	Diode 1S1555
DK71	1	1	1	HD20001000	Diode 1S1555
DK72	1	1	1	HD20001000	Diode 1S1555
DK73	1	1	1	HD20001000	Diode 1S1555
DK74	1	1	1	HD20001000	Diode 1S1555
DK81	1	1	1	HD20001000	Diode 1S1555
DK82	1	1	1	HD20001000	Diode 1S1555
DK83	1	1	1	HD20001000	Diode 1S1555
DK84	1	1	1	HD20001000	Diode 1S1555
DK91	1	1	1	HD20001000	Diode 1S1555
DK91				HD30072090	Zener WZ-100
DK92	1	1	1	HD20001000	Diode 1S1555
⚠D801	1	1	1	HD20015030	Diode DS135D
⚠D802	1	1	1	HD20015030	Diode DS135D
⚠D803	1	1	1	HD20015030	Diode DS135D
⚠D804	1	1	1	HD20015030	Diode DS135D
D805	1	1	1	HD30022090	Zener BZ-120
Q001	1	1	1	HC10017090	IC NJM2043DD
Q002	1	1	1	HC406905B0	IC TC4069UBP

REF. DESIG.	Q'TY U	N	A	PART NO.	DESCRIPTION
QJ01	1	1	1	HT318451U0	Transistor 2SC1845(U)
QJ02	1	1	1	HT318451U0	Transistor 2SC1845(U)
QJ03	1	1	1	HT308282B0	Transistor 2SC828(S or T)
QJ04	1	1	1	HT308282B0	Transistor 2SC828(S or T)
QJ05	1	1	1	HT308282B0	Transistor 2SC828(S or T)
QJ06	1	1	1	HT308282B0	Transistor 2SC828(S or T)
QJ07	1	1	1	HT308282B0	Transistor 2SC828(S or T)
QJ08	1	1	1	HT308282B0	Transistor 2SC828(S or T)
QK01	1	1	1	HT308282B0	Transistor 2SC828(S or T)
QK02	1	1	1	HT308282B0	Transistor 2SC828(S or T)
QK03	1	1	1	HT326342B0	Transistor 2SC2634(S or T)
QK04	1	1	1	HT326342B0	Transistor 2SC2634(S or T)
QK41	1	1	1	HT107332A0	Transistor 2SA733(P or Q)
QK42	1	1	1	HT308282B0	Transistor 2SC828(S or T)
QK43	1	1	1	HT107332A0	Transistor 2SA733(P or Q)
QK51	1	1	1	HT326342B0	Transistor 2SC2634(S or T)
QK52	1	1	1	HT326342B0	Transistor 2SC2634(S or T)
QK61	1	1	1	HT107332A0	Transistor 2SA733(P or Q)
QK62	1	1	1	HT326342B0	Transistor 2SC2634(S or T)
QK71	1	1	1	HT326342B0	Transistor 2SC2634(S or T)
QK72	1	1	1	HT326342B0	Transistor 2SC2634(S or T)
QK73	1	1	1	HT107332A0	Transistor 2SA733(P or Q)
QK74	1	1	1	HT107332A0	Transistor 2SA733(P or Q)
QK81	1	1	1	HT326342B0	Transistor 2SC2634(S or T)
QK82	1	1	1	HT326342B0	Transistor 2SC2634(S or T)
QL01	1	1	1	HT313832B0	Transistor 2SC1383(Q or R)
QL02	1	1	1	HT326342B0	Transistor 2SC2634(S or T)
Q601	1	1	1	HC10058050	IC TA7629P
Q602	1	1	1	HC10058050	IC TA7629P
⚠Q801	1	1	1	HT403131E0	Transistor 2SD313(E)
⚠Q802	1	1	1	HT403131E0	Transistor 2SD313(E)
					PJ01-MISCELLANEOUS
J041	1			YT02040480	Terminal, RCA Pin (4P)
J041		1	1	YT02040470	Terminal, RCA Pin (4P)
JJ01	1	1	1	YJ01001780	Jack, Mic (L)
JJ02	1	1	1	YJ01001780	Jack, Mic (R)
LK01	1	1	1	LC21060510	Choke Coil 10mH
LK02	1	1	1	LC21060510	Choke Coil 10mH
LK03	1	1	1	LC22260510	Choke Coil 22mH
LK04	1	1	1	LC22260510	Choke Coil 22mH
LL01	1	1	1	TC10440030	OSC Transformer
L601	1	1	1	LS10440010	M.P.X. Coil
L602	1	1	1	LS10440010	M.P.X. Coil
PJ11	1	1	1	YU03120260	Jumper Lead, (3P)
PJ12	1	1	1	YU03160260	Jumper Lead, (3P)
PJ13	1	1	1	YU03340260	Jumper Lead, (3P)
PJ71	1	1	1	YP06002420	Plug, (6P)
PJ72	1	1	1	YP06002360	Plug, (3P)
PJ73	1	1	1	YP06001060	Plug, (7P)
PJ74	1	1	1	YJ06002440	Jack
PK11	1	1	1	YU02180260	Jumper Lead, (2P)
S101	1	1	1	SP04010380	Push Switch, Mic/Line
S102	1	1	1	SP02040180	Push Switch, Tape/Dolby/B-C

- (U): for U.S.A.
- (N): for Europe
- (A): for Australia
- (E): for Europe

REF. DESIG.	Q'TY U	Q'TY N	Q'TY A	PART NO.	DESCRIPTION
					(SD320, SD220)
					PJ02-VOLUME
					CIRCUIT BOARD
PJ02	1	1	1	YK129T1720	P.W. Board, Volume
	1	1	1	ZZ129T1720	P.W. Board Assembly
RJ11	1	1	1	RX05030210	Variable Resistor 50KΩ (A)
RJ12	1	1	1	RX05030210	Variable Resistor 50KΩ (A)
					(SD320, SD220)
					PJ03-REC MUTE SWITCH
					CIRCUIT BOARD
PJ03	1	1	1	YK129T1730	P.W. Board, Rec Mute Switch
	1	1	1	ZZ129T1730	P.W. Board Assembly
S103	1	1	1	SP02010900	Push Switch
					(SD320, SD220)
					PJ04-L.E.D.
					CIRCUIT BOARD
PJ04	1	1	1	YK129T1740	P.W. Board, L.E.D.
	1	1	1	ZZ129T1740	P.W. Board Assembly
RY01	1	1	1	GD05152140	Resistor 1.5KΩ ±5% ¼W
RY02	1	1	1	GD05152140	Resistor 1.5KΩ ±5% ¼W
QY01	1	1	1	HI10030020	L.E.D. LN224RP
QY02	1	1	1	HI10030020	L.E.D. LN224RP
PY11	1	1	1	YU03200260	Jumper Lead, (3P)
					(SD320, SD220)
					PJ05-HEADPHONE
					CIRCUIT BOARD
PJ05	1	1	1	YK129T1750	P.W. Board, Headphone
	1	1	1	ZZ129T1750	P.W. Board Assembly
CK92	1	1	1	DK18103300	Ceramic Cap 0.01μF
JJ03	1	1	1	YJ01001790	Jack, Headphone

REF. DESIG.	Q'TY U	Q'TY N	Q'TY A	PART NO.	DESCRIPTION
					(SD320, SD220)
					L.E.D. METER
PX01	1	1	1	HI10801320	L.E.D. Meter
CX91	1	1	1	EA47503530	Elect Cap. 4.7μF 35V
CX92	1	1	1	EA47503530	Elect Cap. 4.7μF 35V
CX93	1	1	1	EA10505030	Elect Cap 1μF 50V
CX94	1	1	1	EA10505030	Elect Cap. 1μF 50V
CX95	1	1	1	EA10601630	Elect Cap. 10μF 16V
RX01	1	1	1	RA01030800	Trimming Resistor 10KΩ
RX02	1	1	1	RA01030800	Trimming Resistor 10KΩ
RX91	1	1	1	GD05472140	Resistor 4.7KΩ ±5% ¼W
RX92	1	1	1	GD05472140	Resistor 4.7KΩ ±5% ¼W
RX93	1	1	1	GD05621140	Resistor 620Ω ±5% ¼W
RX74	1	1	1	YU04220260	Jumper Lead, (4P)

(W01-99)	Assembly and Wiring
(T01-99)	Adjustment
(X01-00)	Correction

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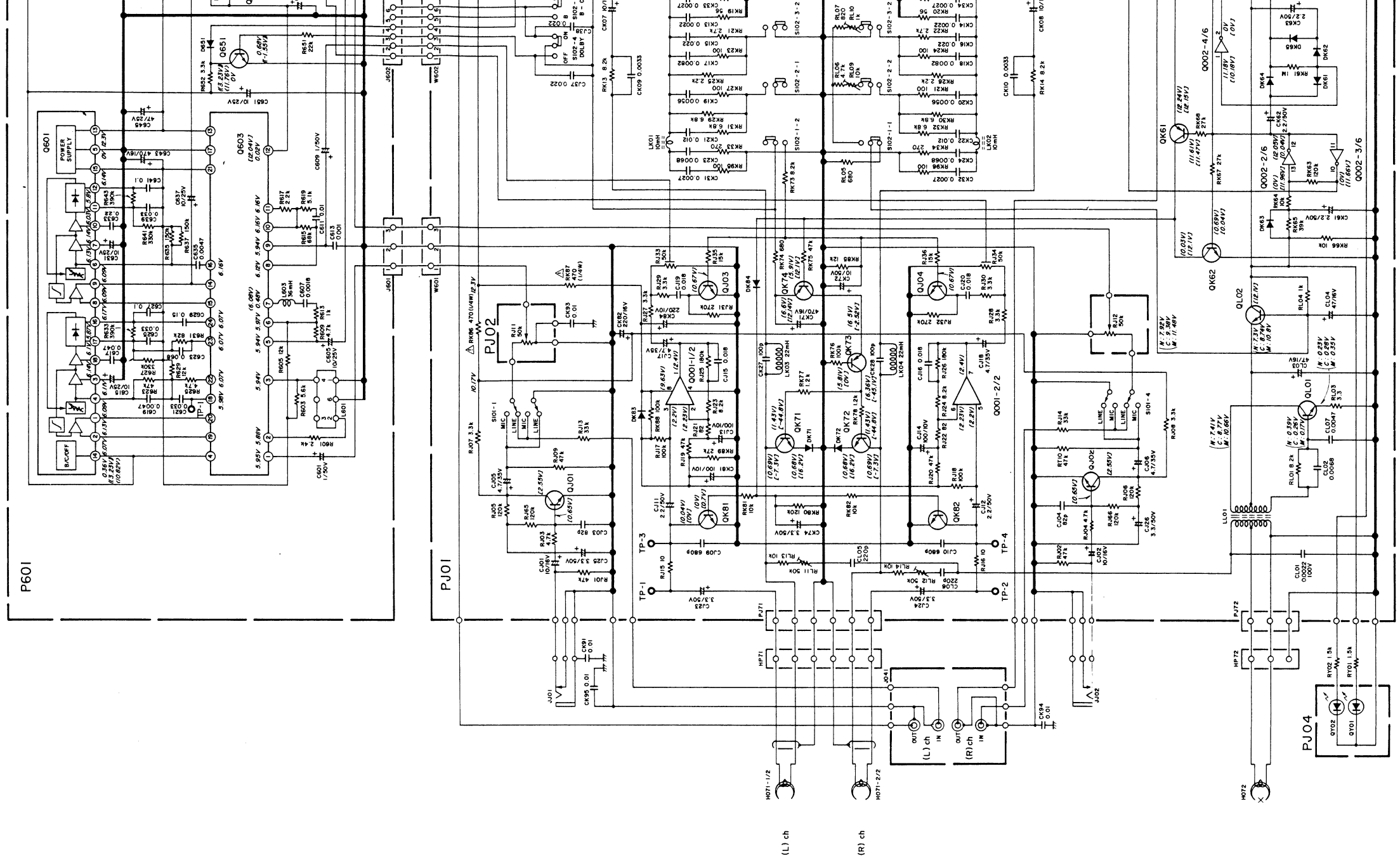
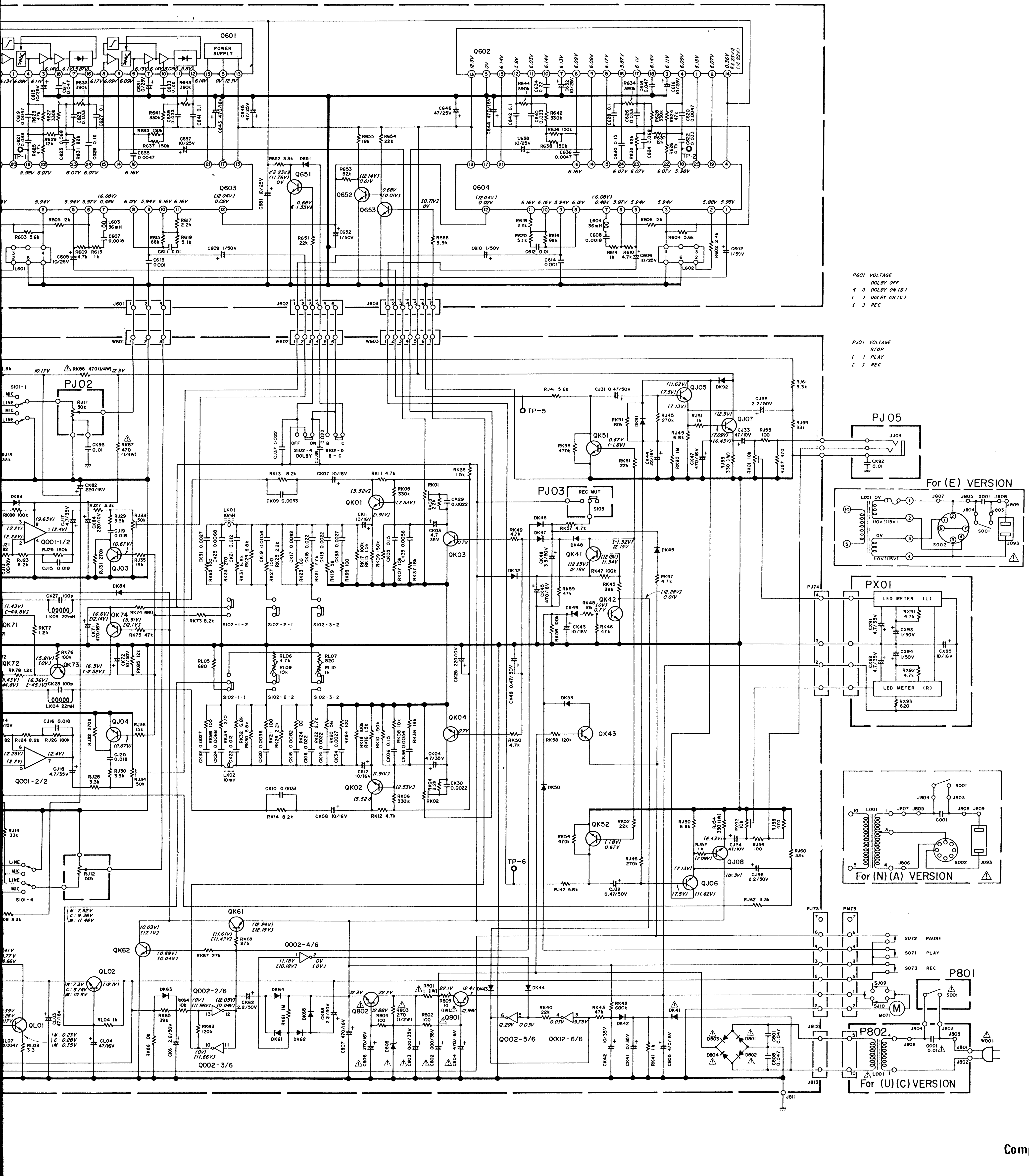
10. TECHNICAL SPECIFICATIONS

Style	Front load
Tape Drive System	Single Capstan Drive
Cartridge	Philips type compact cassette
Track System	Compatible Stereo 4-track 2-channel
Tape Speed	4.75 cm/sec.
Heads	2 Head System
Composition	Rec/Play: Super Hard Metal Alloy
	Erase: Dual gap Ferrite
Motor	1 Motor System
	Capstan DC Servo Motor
Meters	8 Dots Peak LED Meter x 2
Overall Frequency Response at -25 dB	
Normal Tape	30 Hz ~ 15 kHz
CrO_2 Tape	30 Hz ~ 16 kHz
Metal Tape	30 Hz ~ 17.5 kHz
Signal-to-Noise Ratio:	
Dolby (ON) (B) (C) (SD320)	66 dB
Dolby (OFF)	56 dB
Wow and Flutter	
DIN WTD	0.13%
Outputs	
Line Level/Impedance	600 mV/5 kΩ
Headphone Level/Impedance	50 mV/220 Ω
Input (Level at 0 VU)	
Line Sensitivity/Impedance	63 mV/50 kΩ
Mic Sensitivity/Impedance	0.3 mV/10 kΩ
Rewind Time	90 sec. (C-60)
Fast Forward Time	90 sec. (C-60)
AC Line Voltage	
N.T version	220 V/240V AC, 50/60 Hz
E version	110/120/220/240V AC, 50/60 Hz
Power Consumption	SD220 (U) 14 W
	(N) 15 W
	SD320 (U) 16 W
	(N) 17 W
Dimensions (W x H x D)	416 x 100 x 194 mm
Weight	(SD220) 3 kg
	(SD320) 3.2 kg

Specifications and appearance are subject to change for modification without notice.


P601
PJ01
PJ02
PJ04
Q601
POWER SUPPLY
Q603
Q651
Q0001-1/2
Q0001-2/2
Q0002-2/6
Q0002-3/6
Q0002-4/6
QJ01
QJ02
QJ03
QJ04
QK61
QK62
QK71
QK72
QK73
QK81
QK82
QL01
QL02
QY01
QY02
TP-1
TP-2
TP-3
TP-4
S101-1
S101-4
S102-1-1
S102-1-2
S102-2-1
S102-2-2
S102-3-1
S102-3-2
S102-4
LK01
LK02
LK03
LK04
LL01
HP71
HP72
HJ71-1/2
HJ71-2/2
HJ72
(L) ch
(R) ch
OUT
IN
B.C.OFF
MIC
LINE
OFF
ON
DOLBY
B-C



Q001
HC10017090
NJM2043DD

Q002
HC406905B0
TC4069UBP

Q601, Q602
HC10012270
NE652

Q603, Q604
HC10013270
NE654

Q651 ~ Q653
HT326342A1
2SC2634(R,S)

Q801, Q802
HT403131E0
2SD313E

QJ01, QJ02
HT318451U0
2SC1845U

QJ03 ~ QJ08
QK01, QK02, QK42
HT308282B1
2SC828(S,T)

QK03, QK04, QK51, QK5
QK71, QK72, QK81, QK
HT326342B1
2SC2634(S,T)

QK41, QK43, QK61, QK7
HT107332A1
2SA733(P,Q)

QL01
HT313832B0
2SC1383(Q,R)

QY01, QY02
H110030020
LN224RP

D651
HD20001000
DIODE

D801 ~ D804, DK41
HD20015032
DS135D

D805
HD30087090
BZ-130

DK42 ~ DK46, DK48, D
DK53, DK61 ~ DK65, D
DK72, DK83, DK84, DK
HD20001000
DIODE

DK47, DK49
HD30052090
WZ-056

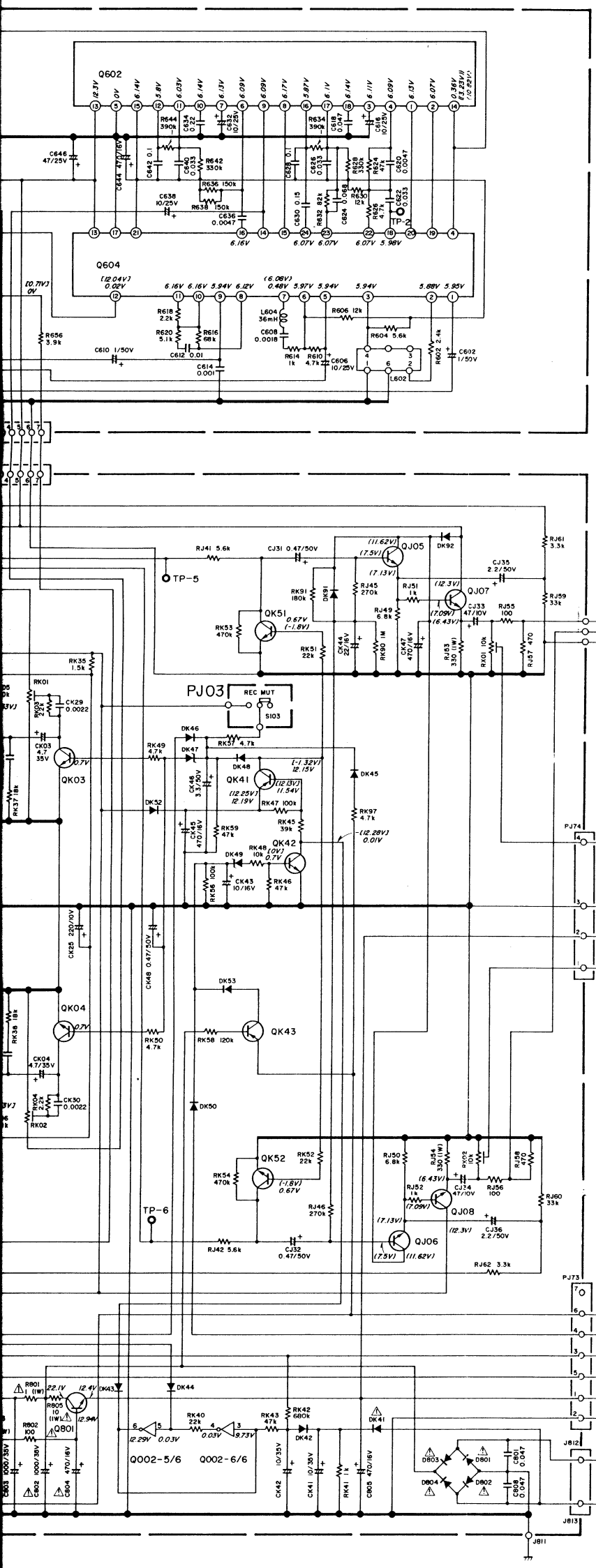
DK93
HD30072090
WZ-100

PX01
H110801320
LT-1056

NOTE ON SA
SYMBOL ⚠
ORIGINAL PA
MARKED WI
SUBSTITUTIO
CREASE RIS

Components and wiri

Model SD320



P601 VOLTAGE
DOLBY OFF
(( )) DOLBY ON (B)
( ) DOLBY ON (C)
[ ] REC

PJ01 VOLTAGE
STOP
( ) PLAY
[ ] REC

Q001
HC10017090
NJM2043DD

Q002
HC406905B0
TC4069UBP

Q601, Q602
HC10012270
NE652

Q603, Q604
HC10013270
NE654

Q651 ~ Q653
HT326342A1
2SC2634(R,S)

Q801, Q802
HT403131E0
2SD313E

QJ01, QJ02
HT318451U0
2SC1845U

QJ03 ~ QJ08
QK01, QK02, QK42
HT308282B1
2SC828(S,T)

QK03, QK04, QK51, QK52, QK62
QK71, QK72, QK81, QK82, QL02
HT326342B1
2SC2634(S,T)

QK41, QK43, QK61, QK73, QK74
HT107332A1
2SA733(P,Q)

QL01
HT313832B0
2SC1383(Q,R)

QY01, QY02
H110030020
LN224RP

D651
HD20001000
DIODE

D801 ~ D804, DK41
HD20015032
DS135D

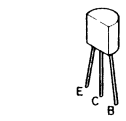
D805
HD30087090
BZ-130

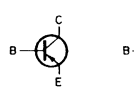
DK42 ~ DK46, DK48, DK50, DK52
DK53, DK61 ~ DK65, DK71
DK72, DK83, DK84, DK91, DK92
HD20001000
DIODE

DK47, DK49
HD30052090
WZ-056

DK93
HD30072090
WZ-100

PX01
H110801320
LT-1056

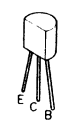




2SA733(P,Q)
QK41, QK43, QK61
QK73, QK74

2SC1845U
2SC828(S,T)
2SC2634(S,T)

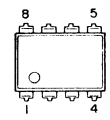
QJ01, QJ02
QK01, QK02, QK42
QJ03~QJ08
QL02, QK03, QK04
QK51, QK52, QK62
QK71, QK72, QK81
QK82
2SC2634(R,S) Q651, Q652, Q653



TOP VIEW

NJM2043DD

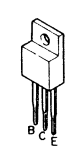
Q001



2SC1383(Q,R)

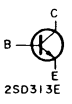
QL01

TOP VIEW



TC4069UBP

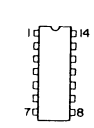
Q002



2SD313E

Q801, Q802

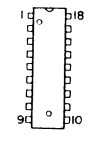
TOP VIEW



TOP VIEW

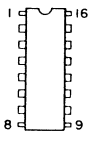
NE652

Q601, Q602 (SD-320)



TA7629P

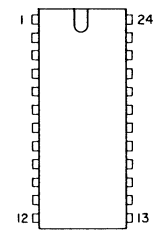
Q601, Q602 (SD-220)



TOP VIEW

NE654

Q603, Q604 (SD-320)



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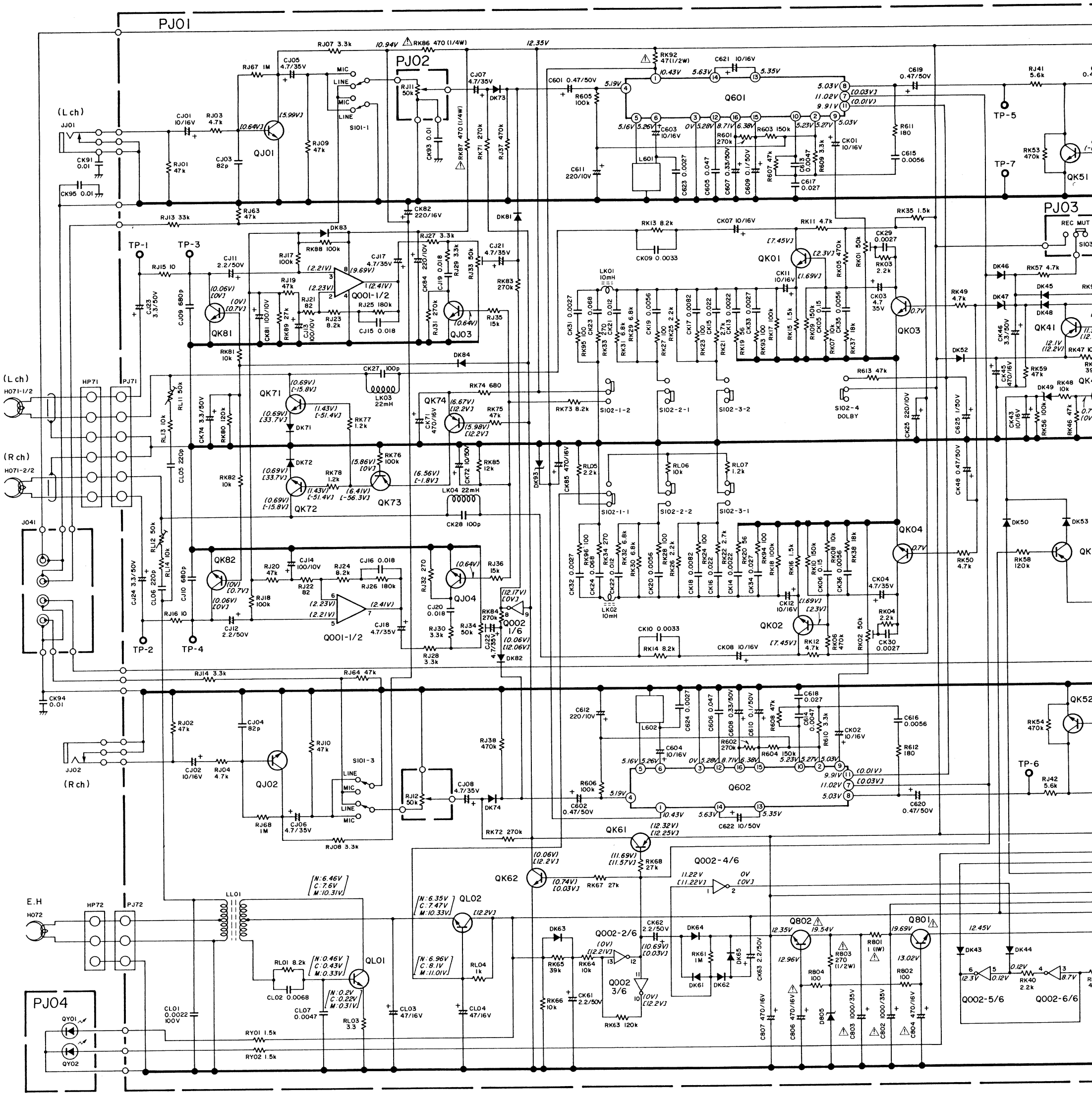
Components and wiring are subject to change for modification without notice.


PJ01
PJ02
PJ03
PJ04
(L ch)
(R ch)
JJ01
JJ02
J041
HP71
PJ71
HP72
PJ72
H071-1/2
H071-2/2
H072
E.H
TP-1
TP-2
TP-3
TP-4
TP-5
TP-6
TP-7
RJ07 3.3k
RK86 470 (1/4W)
RK92 47(1/2W)
RJ67 1M
CJ05 4.7/35V
CJ01 10/16V
RJ03 4.7k
QJ01
RJ09 47k
RJ01 47k
CJ03 82p
CK91 0.01
CK95 0.01
MIC
LINE
S101-1
RJ11 50k
CK93 0.01
RK87 470 (1/4W)
RK71 270k
RJ37 470k
CJ07 4.7/35V
DK73
C601 0.47/50V
R605 100k
Q601
C621 10/16V
C619 0.47/50V
R611 180
C615 0.0056
C611 220/10V
L601
C623 0.0027
C605 0.047
C607 0.33/50V
C609 0.1/50V
R607 47k
C613 0.0047
R609 3.3k
C617 0.027
C603 10/16V
R603 150k
R601 270k
CK01 10/16V
RJ41 5.6k
RK53 470k
QK51
RJ13 33k
RJ63 47k
CK82 220/16V
DK81
DK83
RK88 100k
RJ17 100k
CJ17 4.7/35V
Q001-1/2
RJ27 3.3k
CJ21 4.7/35V
RJ29 3.3k
RJ33 50k
RK83 270k
CK84 220/10V
CJ19 0.018
RJ31 270k
RJ35 15k
QJ03
RJ19 47k
RJ21 82
RJ23 8.2k
RJ25 180k
CJ15 0.018
QK81
CK81 100/10V
RK89 27k
CJ11 100/10V
CJ11 2.2/50V
RJ15 10
CJ23 3.3/50V
CJ09 680p
RK81 10k
DK84
CK27 100p
LK03 22mH
QK71
QK72
QK73
QK74
DK71
DK72
RK77 1.2k
RK78 1.2k
RK76 100k
RK74 680
RK75 47k
CK71 470/16V
RK73 8.2k
S102-1-2
S102-2-1
S102-3-2
S102-4 DOLBY
R613 47k
CK74 3.3/50V
RK80 120k
RK82 10k
CL05 220p
RL13 10k
RL11 50k
CK72 10/50V
RK85 12k
LK04 22mH
CK28 100p
DK93
CK85 470/16V
RL05 2.2k
RL06 10k
RL07 1.2k
S102-1-1
S102-2-2
S102-3-1
CK25 220/10V
C625 1/50V
CK48 0.47/50V
CK43 10/16V
RK56 100k
RK46 47k
RK48 10k
RK49 4.7k
RK50 4.7k
RK58 120k
DK46
DK47
DK48
DK45
DK49
DK52
DK50
DK53
RK57 4.7k
CK46 3.3/50V
CK45 470/16V
RK59 47k
QK41
QK52
QK53
RK47
RK35 1.5k
REC MUT
SI03
RK13 8.2k
CK09 0.0033
CK07 10/16V
RK11 4.7k
QK01
CK11 10/16V
CK29 0.0027
RK03 2.2k
RK05 470k
RK01 50k
CK03 4.7 35V
QK03
LK01 10mH
CK31 0.0027
CK23 0.068
CK21 0.012
RK33 270
RK31 6.8k
RK29 6.8k
CK19 0.0056
RK27 100
RK25 2.2k
CK17 0.0082
RK23 100
CK15 0.022
RK21 2.7k
CK13 0.0022
RK19 56
CK33 0.0027
RK93 100
RK17 100k
RK15 1.5k
RK09 150k
CK05 0.15
RK07 10k
CK35 0.0056
RK37 18k
RK95 100
RK13 8.2k
CK07 10/16V
QK02
CK12 10/16V
RK12 4.7k
RK06 470k
RK02 50k
CK04 4.7/35V
RK04 2.2k
CK30 0.0027
CK10 0.0033
RK14 8.2k
CK08 10/16V
LK02 10mH
CK32 0.0027
CK24 0.068
CK22 0.012
RK34 270
RK32 6.8k
RK30 6.8k
CK20 0.0056
RK28 100
RK26 2.2k
CK18 0.0082
RK24 100
CK16 0.022
RK22 2.7k
CK14 0.0022
RK20 56
CK34 0.0027
RK94 100
RK18 100k
RK16 1.5k
RK10 150k
CK06 0.15
RK08 10k
CK36 0.0056
RK38 18k
RK96 100
QK04
RJ38 470k
RJ02 47k
CJ04 82p
RJ10 47k
CJ02 10/16V
RJ04 4.7k
QJ02
RJ68 1M
CJ06 4.7/35V
RJ08 3.3k
RJ12 50k
CJ08 4.7/35V
DK74
RK72 270k
RJ42 5.6k
C612 220/10V
L602
C624 0.0027
C606 0.047
C608 0.33/50V
C610 0.1/50V
R608 47k
C614 0.0047
C618 0.027
R610 3.3k
CK02 10/16V
C616 0.0056
R612 180
C604 10/16V
R602 270k
R604 150k
R606 100k
C602 0.47/50V
C622 10/50V
C620 0.47/50V
Q602
QK61
QK62
RK68 27k
RK67 27k
Q002-4/6
Q002-2/6
Q002 3/6
CK62 2.2/50V
DK63
DK64
DK65
DK61
DK62
RK61 1M
RK65 39k
RK64 10k
RK66 10k
CK61 2.2/50V
RK63 120k
CK63 2.2/50V
Q802
Q801
R803 270 (1/2W)
R801 1 (1W)
R804 100
R802 100
C807 470/16V
C806 470/16V
D805
C803 1000/35V
C802 1000/35V
C804 470/16V
Q002-5/6
Q002-6/6
RK40 2.2k
DK43
DK44
LL01
QL01
QL02
RL01 8.2k
CL02 0.0068
CL07 0.0047
RL03 3.3
CL01 0.0022 100V
CL03 47/16V
CL04 47/16V
RL04 1k
QY01
QY02
RY01 1.5k
RY02 1.5k
RJ14 3.3k
RJ64 47k
CK94 0.01
RJ72 270k
RJ28 3.3k
RJ30 3.3k
RJ34 50k
RJ36 15k
CJ20 0.018
CJ22 4.7/35V
RK84 270k
Q002 1/6
DK82
CJ14 100/10V
RJ20 47k
RJ22 82
RJ24 8.2k
CJ16 0.018
RJ26 180k
CJ18 4.7/35V
RJ18 100k
RJ16 10
CJ12 2.2/50V
QK82
RJ32 270
QJ04
CJ24 3.3/50V
CL06 220p
RL12 50k
RL14 10k
CJ10 680p
10.94V
12.35V
10.43V
5.63V
5.35V
5.19V
5.03V
11.02V
9.91V
[0.03V]
(0.01V)
5.16V
5.26V
0V
5.28V
8.71V
6.38V
5.23V
5.27V
[7.45V]
[2.3V]
[1.69V]
0.7V
(12.17V)
[0V]
(12.32V)
[12.25V]
(0.06V)
[12.2V]
(11.69V)
[11.57V]
(0.74V)
[0.03V]
11.22V
[11.22V]
(10.69V)
[0.03V]
12.96V
19.54V
19.69V
13.02V
12.45V
12.3V
0.12V
8.7V
(0.69V)
[33.7V]
(1.43V)
[-51.4V]
(5.86V)
[0V]
(6.41V)
[-56.3V]
(6.56V)
[-1.8V]
(6.67V)
[12.2V]
(5.98V)
[12.2V]
(0.69V)
[-15.8V]
(0.06V)
[0V]
(0V)
[0.7V]
(2.21V)
(9.69V)
(2.23V)
(2.41V)
[5.99V]
[0.64V]
(0.64V)
[N:6.46V C:7.6V M:10.31V]
[N:6.35V C:7.47V M:10.33V]
[12.2V]
[N:6.96V C:8.1V M:11.01V]
[N:0.46V C:0.43V M:0.33V]
[N:0.2V C:0.22V M:0.31V]
(0V)
[12.2V]
(0V)
[0V]
(12.2V)

Model SD220

Q001
HC10017090
NJM2043DD

Q002
HC406905B0
TC4069UBP

Q601,Q602
HC10058050
TA7629P

Q801,Q802
HT403131E0
2SD313E

QJ01,QJ02
HT318451U0
2SC1845U

QJ03～QJ08,QK01
QK02,QK42
HT326342B1
2SC2634S,T

QK03,QK04,QK51,QK52
QK62,QK71,QK72
QK81,QK82,QL02
HT326342B1
2SC2634S,T

QK41,QK43,QK61
QK73,QK74
HT107332A1
2SA733P,Q

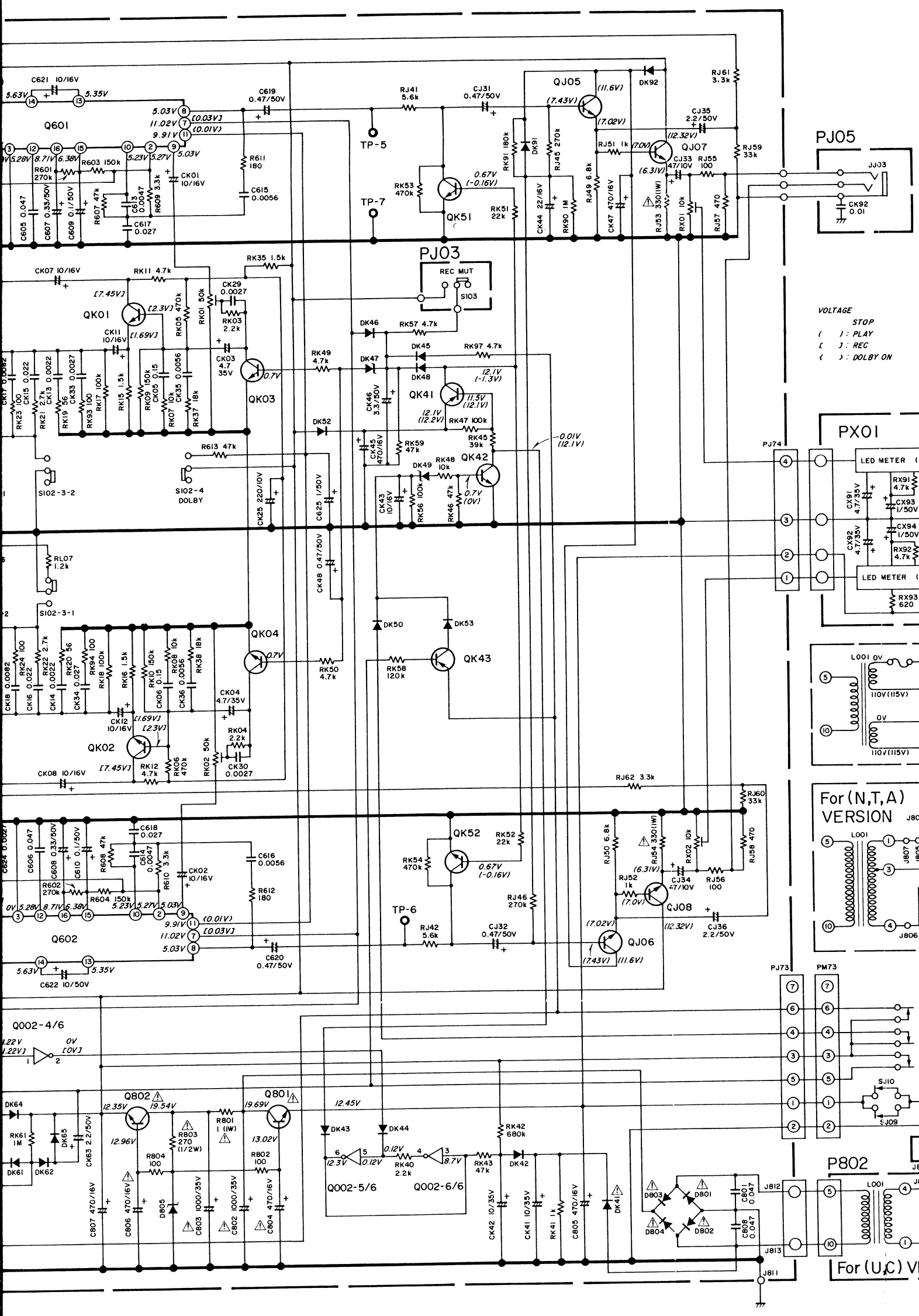
QL01
HT313832B0
2SC1383Q,R

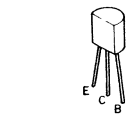
QY01 QY02
H110030020
LN224RP

D801～D804,DK41
HD20015032
DSI35D

D805
HD30087090
BZ-130

VOLTAGE
STOP
( ) : PLAY
[ ] : REC
< > : DOLBY ON

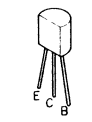




2SA733(P,Q)
QK41,QK43,QK61
QK73,QK74

2SC1845U
2SC828(S,T)
2SC2634(S,T)

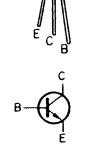
QJ01,QJ02
QK01,QK02,Q
QJ03～QJ08
QL02,QK03,Q
QK51,QK52,Q
QK71,QK72,Q
QK82
2SC2634(R,S) Q651,Q652,Q



TOP VIE

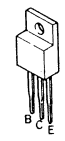
NJM2043

Q001



2SC1383(Q,R)

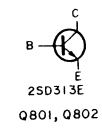
QL01



TOP VI

TC4069U

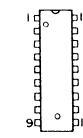
Q002



2SD313E

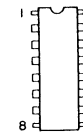
Q801,Q802

TOP VIEW



NE652

Q601,Q602(SD-320)



TA7629

Q601,Q602(SD

TOP VIEW

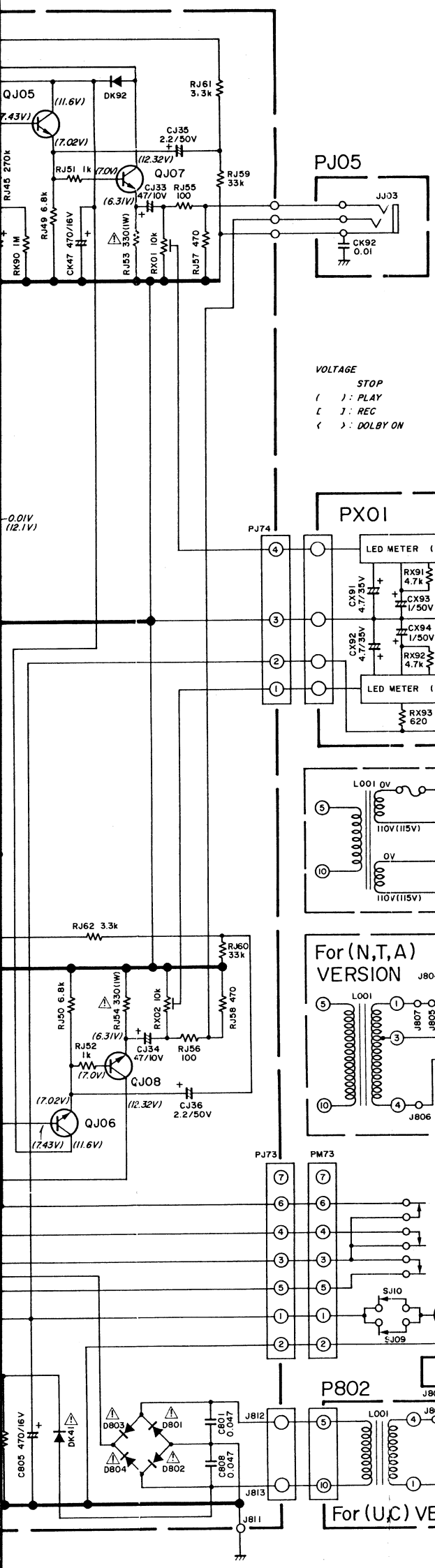
NE654

Q603,Q604(SD-320)

NOTE ON SAFETY:
SYMBOL ⚠ FIRE OR ELECTRICAL SHOCK HA
ORIGINAL PARTS SHOULD BE USED TO REPLAC
MARKED WITH SYMBOL ⚠. ANY OTHER
SUBSTITUTION (OTHER THAN ORIGINAL TYP
CREASE RISK OF FIRE OR ELECTRICAL SHO

Components and wiring are subject to change for modification wit

Model SD220



Q001
HC10017090
NJM2043DD

Q002
HC406905B0
TC4069UBP

Q601,Q602
HC10058050
TA7629P

Q801,Q802
HT403131E0
2SD313E

QJ01,QJ02
HT31845IU0
2SC1845U

QJ03～QJ08,QK01
QK02,QK42
HT326342B1
2SC2634S,T

QK03,QK04,QK51,QK52
QK62,QK71,QK72
QK81,QK82,QL02
HT326342B1
2SC2634S,T

VOLTAGE
STOP
( ): PLAY
[ ]: REC
< >: DOLBY ON

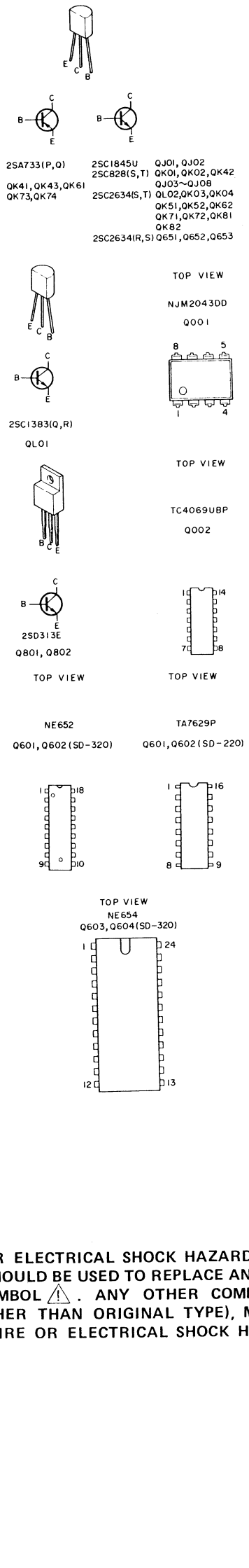
QK41,QK43,QK61
QK73,QK74
HT107332A1
2SA733P,Q

QL01
HT313832B0
2SC1383Q,R

QY01 QY02
H110030020
LN224RP

D801～D804,DK41
HD20015032
DSI35D

D805
HD30087090
BZ-130



VOLTAGE
STOP
( ): PLAY
[ ]: REC
< >: DOLBY ON

DK42～DK46,DK48
DK50,DK52,DK53
DK61～DK65
DK71～DK74
DK81～DK84
DK91,DK92
HD20001000
DIODE

DK47,DK49
HD30052090
WZ056

DK93
HD30072090
WZ100

PX01
H1110801320
LT-1056

NOTE ON SAFETY:
SYMBOL ⚠ FIRE OR ELECTRICAL SHOCK HAZARD. ONLY ORIGINAL PARTS SHOULD BE USED TO REPLACE ANY PART MARKED WITH SYMBOL ⚠. ANY OTHER COMPONENT SUBSTITUTION (OTHER THAN ORIGINAL TYPE), MAY INCREASE RISK OF FIRE OR ELECTRICAL SHOCK HAZARD.

Components and wiring are subject to change for modification without notice.